

इंडियन ऑयल कार्पोरेशन लिमिटेड

पानीपत रिफाबनरी एवं पेट्रोकेमिकन कॉम्प्लेक्स पानीपत, हरियाणा - 132140 Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex Panipat, Haryana - 132140

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Date: 14.07.2022

रिफाइनरीज़ प्रभाग Refineries Division

Ref No: PR/HSE/2022/EC Compliance/1

To. The Additional Director(S), Ministry of Environment, Forest & Climate Change, Govt. of India, Regional Office (NR), Bays No. 24-25, Sector 31-A, Dakshin Marg. Chandigarh- 160047

Subject: Six Monthly Environmental Clearances Compliance Report (Jan'2022 to June'2022)- Panipat Refinery and Petrochemical Complex.

Enclosed please find herewith the Six Monthly Environmental Clearances (ECs) Compliance Report- Panipat Refinery and Petrochemical Complex Complex for the period of Jan'2022 to Jun'2022 of the MoEF&CC stipulations w.r.t. following EC letters;

- EC Letter No. J-11011/27/91-IA II(I) dated 16.07.1992 for setting up of a grass root refinery at Karnal district by Indian 1. Oil Corporation Limited.
- EC Letter No. J.11011/60/2000-IA.II dated 09.04.2001 for Expansion of Panipat Refinery (PREP) from 6 MMTPA to 12
- 3. EC Letter No. J.11011/52/2000-IA.II dated 30.04.2001 for Integrated Paraxylene and Purified Terphthalic Acid Projects at Panipat by M/s IOCL.
- 4. EC Letter No. J.11011/9/2001-IA II (I) dated 06.12.2001 for MS Quality Up-gradation Project at Panipat Refinery by
- 5. EC Letter No. J.11011/52/2000-IA II (I) dated 20.01.2003 for Modification In Plant layout of Paraxylene and Purified Terephthalic Acid (PX/PTA) Project within Panipat Refinery Complex and Integrated with Panipat Refinery (PR) and Panipat Refinery Expansion Project (PREP).
- EC Letter No. J.11011/7/2004-IA II (I) dated 09.08.2004 for expansion of Panipat Refinery (From 12 MMTPA to 15 MMTPA) and Setting up of Indalin+ unit at Panipat Refinery Complex of IOCL, Panipat Refinery Haryana.
- 7. EC Letter No. J.11011/177/2016-IA II (I) dated 26th March, 2018 for BS-VI Fuel Quality up-gradation and expansion of PX/PTA plant at Panipat Refinery & Petrochemical Complex (PRPC), Panipat (Haryana) by M/s Indian Oil Corporation Limited.
- EC Letter No. IA-J-11011/43/2018-IA- II (i) dated 13.11.2019 for installation of 100 KLPD Ligno-Cellulosic 2G Ethanol Plant at Baholi, Block Madlauda, Panipat Refinery road, District Panipat (Haryana) By M/S Indian Oil Corporation Limited.
- EC Letter No. J-11011/78/2018-IA- II (I) dated 25.11.2019 for setting up 128 KL per day Ethanol Production Plant by M/s Indian Oil Corporation Ltd. (IOCL) In Panipat Refinery & Petrochemical Complex at Panipat, Haryana.
- 10. EC Letter No. J-11011/177/2016- IA II(I) dated. 03.12.2021 for Panipat Refinery capacity expansion from existing 15 MMTPA to 25 MMTPA within the existing refinery complex.

Thanking you,

Copy To:

Yours faithfully,

atishnay. (P. V. RAMAKRISHNA) 41712 L General Manager (HS&E)

For and on behalf of IOCL.

Panipat Refinery & Petrochemical Complex श्री, श्री, श्राव्यक्ष्मा

P. V. Ramakrishna
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Panipat Refinery & Petrochemical Complex (I.O.C.L)
प्रावेदार Panipat Refinery & Petrochemical Complex (I.O.C.L) hur, Panipat-132140

The Regional Officer, HSPCB, Panipat The Chairman, HSPCB, Panchkula

पंजीकृत कार्यातयः जी-9, असी यावर जंग भागं, बान्दा (पूर्व), मुग्दई-400851, महाराष्ट्र (बारत) Regd. Office: G-9, Ali Yavar Jung Marg. Bandra (East), Mumbai-400051, Maharashtra (India CIN − L 23201 MH 1959 GOI 011388

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S. No.	EC General and specific conditions/Environmental monitoring reports	Compliance Status		
1	EC Letter No. J-11011/27/91-IA II(I) dated 16.07.1992 for setting up of a grass root refinery at Karnal district by Indian Oil Corporation Limited.	Attached as Annexure-1		
2	EC Letter No. J.11011/60/2000-IA.II dated 09.04.2001 for Expansion of Panipat Refinery (PREP) from 6 MMTPA to 12 MMTPA.	Attached as Annexure-2		
3	3EC Letter No. J.11011/52/2000-IA.II dated 30.04.2001 for Integrated Attached as Ann Paraxylene and Purified Terphthalic Acid Projects at Panipat by M/s IOCL.			
4	EC Letter No. J.11011/9/2001-IA II (I) dated 06.12.2001 for MS Quality Upgradation Project at Panipat Refinery by IOCL.	Attached as Annexure-4		
5	EC Letter No. J.11011/52/2000-IA II (I) dated 20.01.2003 for Modification in Plant layout of Paraxylene and Purified Terephthalic Acid (PX/PTA) Project within Panipat Refinery Complex and Integrated with Panipat Refinery (PR) and Panipat Refinery Expansion Project (PREP).	Attached as Annexure-5		
6	EC Letter No. J.11011/7/2004-IA II (I) dated 09.08.2004 for expansion of Panipat Refinery (From 12 MMTPA to 15 MMTPA) and Setting up of Indalin+ unit at Panipat Refinery Complex of IOCL, Panipat Refinery Haryana.	Attached as Annexure-6		
7	EC Letter No. J.11011/177/2016-IA II (I) dated 26th March, 2018 for BS-VI Fuel Quality up-gradation and expansion of PX/PTA plant at Panipat Refinery & Petrochemical Complex (PRPC), Panipat (Haryana) by M/s Indian Oil Corporation Limited.	Attached as Annexure-7		
8	EC Letter No. IA-J-11011/43/2018-IA- II (I) dated 13.11.2019 for installation of 100 KLPD Ligno-Cellulosic 2G Ethanol Plant at Baholi, Block Madlauda, Panipat Refinery road, District Panipat (Haryana) By M/S Indian Oil Corporation Limited.	Attached as Annexure-8		
9	EC Letter No. J-11011/78/2018-IA- II (I) dated 25.11.2019 for setting up 128 KL per day Ethanol Production Plant by M/s Indian Oil Corporation Ltd. (IOCL) In Panipat Refinery & Petrochemical Complex at Panipat, Haryana.	Attached as Annexure-9		
10	EC Letter No. J-11011/177/2016- IA II(I) dated. 03.12.2021 for panipat refinery capacity expansion from existing 15 MMTPA to 25 MMTPA within the existing complex.	Attached as Annexure-10		
11	Ambient Air quality data.	Attached as Annexure-11		
12	Stack Emission data	Attached as Annexure-12		
13	Effluent quality data	Attached as Annexure-13		
14	Fugitive Emission data	Attached as Annexure-14		

COMPLIANCE TO ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR SETTING UP OF A GRASSROOT REFINERY AT KARNAL, DISTRICT BY INDIAN OIL CORPORATION LIMITED - EC Letter no. J-11011/27/91-IA.II(I) dated 16.07.1992

SN	Stipulation	Compliance
1.	The project authority must strictly adhere to the	Being Complied
	stipulations laid down by the State Pollution Control	
	Board and State Government.	
2.	Any expansion of the plant, either with the existing	Being Complied
	product mix or new products can be taken up only	
	with the prior approval of this ministry.	
3.	Sulphur recovery unit with more than 90% Sulfur	Being Complied
	Recovery should be installed and commissioned	Panipat Refinery has 5 nos. Sulphur Recovery Units
	before the project is completed, and measure for its	(SRUs) as detailed below and 4 (99.9% recovery
	continuous operation must be taken. Techno- economic feasibility study for additional standby	efficiency) out of 5 units are in operation: • 1 no. SRUs: 99% efficiency ,1X115 MT/day capacity
	sulphur recovery system may be initiated after the	• 4 no. SRUs: 99.9% efficiency ,4X225 MT/day capacity
	installation of first unit.	4 110. SNOS. 99.9% efficiency ,4x223 lv11/day capacity
4.	Low Sulfur fuel (Sulphur content not exceeding 1%)	Being Complied
	should be used in the boilers/furnaces.	
5.	Low NO _x burners should be used to avoid excessive	Being Complied
	formation of NO _x .	Low NO _x burners have been installed in the process
		heaters , Boilers , furnaces etc.
6.	Total emission of SO2 from the refinery should not	Being Complied
	exceed 1 Ton/hr.	SO ₂ emission from the Refinery is well within the limit.
7.	The gaseous emissions (SO_2 , NO_x etc.) from various	Being Complied
	process units should conform to the standards	
	prescribed by the concerned authorities, from time	
	to time.	
	At no time the emission levels should go beyond the stipulated standards. In the event of failure of any	
	pollution control system adopted by the unit, the	
	respective unit should be put out of operation	
	immediately and should not be restarted until the	
	control measure are rectified to achieve the desired	
	efficiency.	
8.	Adequate number (a minimum of 7) of air quality	Being Complied
	monitoring stations should be set up in the down-	Total 9 nos. of CAAQMS (2 nos. in Panipat city, 1 no. in
	wind direction as well as where maximum ground	Refinery township, 5 nos. in Refinery & 1 in Polishing
	level concentration is anticipated. Stack emission	Pond area) are in operation. These were set up in
	should be monitored by setting up of an automatic	consultation with HSPCB. Also, one mobile van for
	continuous stack monitoring unit. The data on stack	ambient air quality monitoring is in place.
	emission should be submitted to the State Pollution	For all stocks: CO. NO. CO. 9. DM analyzara are available
	Control Board once in three months and to this	For all stacks: SO ₂ , NO _x , CO & PM analyzers are available and connected to CPCB/HSPCB server.
	Ministry once in six months along with the statistical analysis. The air quality monitoring station should be	and connected to CPCB/HSPCB server.
	selected on the basis of modeling exercise to	Data on stack emission are submitted to HSPCB/MoEFCC
	represent the short-term ground level	as per frequency mentioned.
	concentrations.	
9.	Fugitive emissions of hydrocarbons from storage	Being Complied
	tanks etc. should be minimized by adopting	
	necessary measures.	
10.	Fugitive emission should be regularly monitored and	Being Complied
	record maintained.	Fugitive emission monitoring for Hydrocarbon and
		Benzene is done quarterly through approved agency.

SN	Stipulation	Compliance
11.	There should be no change in the stack design	
	without the approval of the State Pollution Control	Noted.
	Board. Alternate pollution control system and proper	
	design in the stack should be provided to take care of excess emissions due to failure in any system of	
	the plant.	Being Complied.
12.	The height of stacks attached to AVU, FCCU and TPS	Implemented.
	etc. should not be less than 100 m.	•
13.	Total fresh water consumption (Industrial as well as	8 MGD water allocated for 6 MMTPA Refinery. However,
	township) should not exceed 8 MGD. Ground Water	further EC granted to Refinery expansion from 6 to 12
	should not be tapped for this purpose.	MMTPA (J.11011/7/2004-IA-II (I) dated 09.08.2004) Fresh water allocation increased to 30 cusec.
14.	The project authorities must recycle wastewater to	Being Complied
	the maximum extent possible (at least 25% to 30%	
	to start with). The treated effluent coming out of the	ETP-I and II Treated effluent meeting Refinery MINAS
	plant must meet MINAS.	parameter is "Recycled and Reused" as feed to RO plant
4-		and make up water to Cooling Tower.
15.	Adequate number of effluent quality (oil & Grease, COD, BOD, suspended Solids, Phenols, Sulphides, pH	Effluent quality as mentioned is being monitored at various stages of Effluent Treatment Plant. Also final
	and Flow) monitoring stations must be set up in	Treated Effluent Quality parameters (pH, BOD, COD &
	consultation with State Pollution Control Board.	TSS) are connected online to CPCB/HSPCB server.
16.	Maximum recovery of oil from the sludge should be	The raw oily sludge generated from the Refinery is
	done and residual oily sludge should be incinerated.	subjected to Oil recovery / Melting Pit treatment for
		recovery of oil. The recovered oil is recycled back with
		crude oil for processing.
		- The residual sludge is disposed-off through confined Bio-remediation.
		- Part of the sludge is processed in Coker unit.
		Tare of the studge is processed in concertaint.
17.	The project authorities must prepare a scheme for	Boing Complied
17.	solid and hazardous waste disposal. The plan for	Being Complied A common hazardous waste disposal site is developed in
	disposal duly approved from the State Pollution	the state by Haryana Environmental Management Society
	Control Board should be submitted to this Ministry	(HEMS) in consultation with Haryana State Pollution
	within one year and adequate space should be	Control Board. Panipat Refinery is the member of this
	provided for it within the plant premises.	society.
18.	A green belt of at least 500 m width and adequate	Complied
	density should be developed and maintained. Selection of the species should be done in	Greenbelt of 500 m width have been developed and maintained after consultation with State Forest
	consultation with the State Forest Department. A	Department.
	detailed green belt development plan taking into	bepartment.
	account attenuation factors, soil characteristics etc.	
	should be prepared and submitted to this Ministry	
4.5	within six months.	
19.	A detailed risk analysis study based on Maximum	A Comprehensive Risk Analysis is conducted. Report has
	Credible Accident (MCA) analysis should be done and submitted to this Ministry once the process	been submitted.
	design/technology and layout is finalized. Based on	
	this, a Disaster Management Plan has to be prepared	On-site Disaster Management Plan based on this Risk
	and after approval by the concerned Nodal Agency,	Analysis is also prepared which is accredited from
	should be submitted to this ministry within six	approved Third Party Inspection agency of PNGRB.
	months. The impact zone under no circumstances	
20	should cross the plant premises.	Action by State Covernment
20.	A 'no development zone' of minimum 5km radius in between the refinery and the Panipat town should	Action by State Government.
	between the rennery and the Panipat town Should	

SN	Stipulation			Comp	liance		
	be provided. Where only restricted growth on	Letter sent from PR to DC, Panipat dated 16			6.05.2020		
	nonpolluting industries may be allowed (Action – State Govt.)	requestin	g enforce	ment of th	nis conditi	on.	
21.	No tree should be cut from the site without prior written order of the competent authority.	Being Complied					
22.	The industrial township should be located on the northern side of the refinery i.e. in the up-wind direction.	Complied	Complied				
23.	A detailed Rehabilitation Plan for the affected people should be prepared and submitted to this Ministry within 3 months.	Complied	Complied				
24.	Contractor's labourers must leave place after the construction work is over to avoid creation of slum in the adjoining areas of the refinery and township.	Complied					
25.	A comprehensive EIA must be prepared and submitted to this Ministry by September, 1993 covering regional implications and 'no development zone' aspects.	Complied					
26.	Feasibility of using 20 tonner trucks may be studied / assessed wherever road transport is being envisaged and report submitted to this Ministry within three months.	Bulk Mov	ement of	Products i	s through	Pipeline a	and Rail.
27.	Necessary approval may be obtained from the Regulatory Authority as per Section 5(2) and 5(3) of the Hazardous Wastes (Management and Handling) Rules, 1989 of the Environment (Protection) Act, 1986.	Being Complied					
28.	The State Govt. should prepare a Master Plan for the region to avoid haphazard growth of industries and human settlements in the area.	Action by State Government.					
29.	The project authority must set up laboratory facilities for collection and analysis of samples under the supervision of competent technical personnel, who will directly report to the Chief Executive.	Complied					
30.	A separate Environment Management Cell with suitably qualified people to carry out various functions should be set up under the control of Sr. Executive, who will report directly to the Head of the organization.	Complied					
31.	The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be	Being Imp Year-wise					
	reported to this Ministry.			21-22			
			I		In laks)		
		Recurr	Non-	Recurr	Non-	Recurr	Non-
		ing	recurri	ing	recurri	ing	recurri
		<u> </u>	ng	1220.0	ng	701.70	ng 2940.7
		551.8	3060.3	1229.8	3465.0	701.70	2849.7

Compliance status with respect to the EC conditions stipulated in the letter for Panipat Refinery Expansion Projects (PREP) from 6 MMTPA to 12 MMTPA – EC letter no. J.11011/60/2000-IA.II dated 09.04.2001:

S	Conditions stipulated	in the EC letter	Status
N 1.	The company should	strictly adhere to the stipulations made by	Being Complied
		J.11011/76/96-IAII dated 5 th March,1997	Sempress
2.		emission from the entire Refinery complex xceed 1000 kg/hr even after proposed	Being Complied
	particulate ma conform to Environmenta	emissions (SO ₂ , NO _x , HC, CO) and atters, from various process units should the standards prescribed under (Protection) Rules, 1986 or norms SPCB whichever is most stringent.	Being Complied
	c) At no time, t stipulated star	he emission level should go beyond the odards.	Being Complied
	adopted by the restarted until	of failure of pollution control system(s) are unit, the respective unit should not be if the control measures are rectified to esired efficiency.	Being Complied
3.	Sulphur recovery unit provided.	s with more than 99% efficiency shall be	Being Complied Four SRUs with 99.9% recovery have been installed & are operational.
4.	NO _x , HC sho consultation	pient air quality monitoring stations SO ₂ , all be set up in the Refinery area in with SPCB, based on occurrence of and level concentration and down-wind nd.	Being Complied 9 nos. of CAAQMS (5 nos. in Refinery, 2 nos. in Panipat city, 1 no. each in Refinery Township, and Polishing Pond area) are in operation. These were set up in consultation with HSPCB. Also mobile van for ambient air quality monitoring is in place.
		ng network must be decided based on se to represent short term GLCs.	Complied
	c) In addition, a monitor amb	mobile van with adequate facilities to ient air quality outside the Refinery ld be provided.	Complied Mobile van with adequate facilities for ambient air quality monitoring is already available & is in operation.
	I	n-line stack monitoring equipment should r measurement of SO ₂ , NOx, CO & PM.	For all stacks: SO ₂ , NO _x , CO & PM analyzers are available and connected to CPCB / HSPCB server.
5.		n of HC from product storage tank yard, tc, must be regularly monitored.	Being Complied Fugitive emission monitoring for Hydrocarbon and Benzene is done quarterly through approved agency.
	b) Sensors for deteat strategic locat	cting HC leakages should also be provided ions.	Hydrocarbon leak detectors installed at strategic locations.

6.	a)	As per the commitment given, there will be no discharge of treated effluent into Thirana drain.	Treated effluent from ETP-1 & ETP-2 is reused as feed to RO plant and as make up to Cooling Tower. Treated Effluent from PTA-ETP (ETP-3) meeting Petrochemical MINAS is discharged into THIRANA DRAIN as per permission granted by statutory bodies (MoEFCC & HSPCB).
	b)	The liquid effluent generated from the Refinery should be treated comprehensively to conform to the load based standards and concentration limits prescribed under EPA rules.	Liquid effluent generated from Refinery & PX-PTA Petrochemical Complex is being treated in Waste Water Treatment Plant(s) which are meeting applicable Refinery & Petrochemical MINAS standards. Treated effluent from ETP-1 & ETP-2 is reused as feed to RO plant and as make up to Cooling Tower.
			Treated Effluent from PTA-ETP (ETP-3) meeting Petrochemical MINAS is discharged into THIRANA DRAIN as per permission granted by statutory bodies (MoEFCC & HSPCB).
	c)	The entire treated wastewater should be recycled for reuse in the plant operation and green belt development so as to maintain zero discharge.	ETP-1 & ETP-2 treated effluent is recycled and reused as feed to RO plant and as make up to Cooling Tower. Treated Effluent from PTA-ETP (ETP-3) meeting Petrochemical MINAS is discharged into THIRANA DRAIN as per permission granted by statutory bodies (MoEFCC & HSPCB).
7.	a)	Guard ponds of sufficient holding capacity should be provided to contain the effluent during process disturbance and or ETP failure.	Complied.
	b)	The concerned units must be shut down in case of effluent quality exceeding the prescribed limits.	Being Complied with.
8.	a)	The company should adopt mounded storage for LPG.	Complied. Mounded storage is used for LPG storage.
	b)	The recommendations made in the Rapid Risk Assessment Report must be incorporated while firming up the plant layout and equipment design.	Complied. The recommendations of the Rapid Risk Assessment for the study have been incorporated in the plant layout and equipment design.
	c)	The company must prepare a comprehensive risk assessment/analysis of the Refinery and associated facilities once the engineering design and layout is frozen.	Complied.
	d)	Based on this, on-site and off-site emergency preparedness plan must be prepared.	Complied. Onsite and Offsite Emergency Preparedness plans already prepared for Panipat Refinery.
	e)	Approval from the nodal agency must be obtained before commissioning the project.	Complied.
9.	exce	drawl of water from the Munak Head-works should not ed 30 cusecs even after the proposed expansion.	Being Complied.
_		onditions:	Chatara
SN		ditions stipulated in the EC letter	Status Reing complied
1.	ine	project authorities must strictly adhere to the stipulations	Being complied

		T
	made by the Haryana State Pollution Control Board and the State Government.	
2.	No further expansion or modifications in the plant should be	Being complied
2.	carried out without prior approval of the Ministry of	being complica
	Environment and Forest.	
3.	In case of deviations or alterations in the project proposed from	Being complied
	those submitted to this Ministry for Clearance, a fresh reference	
	should be made to the Ministry to assess the adequacy of	
	conditions imposed and to add additional environmental	
	protection measures required, if any.	
4.	Data on ambient air quality, stack emission as well as fugitive	Being complied.
	emissions of HC must be regularly monitored and submitted to CPCB once in 3 months and to Ministry's Regional Office once in	Montioned reports are being sent to MOEERCC
	6 months.	Mentioned reports are being sent to MOEF&CC once in 6 months. Stack analyzers are online
	o montais.	connected with CPCB/HSPCB server.
5.	Influent and effluent quality monitoring stations should be set	Influent and Effluent quality is being monitored
	up in consultation with the State Pollution Control Board.	at various stages of Effluent Treatment Plants.
	Regular monitoring should be carried out for the MINAS	Final Treated Effluent Quality parameters (pH,
	parameters.	BOD, COD & TSS) are also connected online to
		CPCB/HSPCB server.
6.	The project authorities must strictly comply with the rules and	Being complied.
	regulations under Manufacture, Storage and Import of	
	Hazardous Chemicals Rules, 1989 as amended, on 3 rd October,	
	1994. Prior approvals from Chief Inspectorate of Factories, Chief	
	Controller of Explosives, Fire & Safety Inspectorate etc. must be obtained.	
7.	The project authorities must strictly comply with the rules and	Being complied.
'	regulations with regard to handling and disposal of hazardous	being complicat
	wastes in accordance with the Hazardous Wastes (Management	
	& Handling) Rules, 1989. Authorization from the State Pollution	
	Control Board must be obtained for	
	collections/treatment/storage/disposal of hazardous wastes.	
8.	Occupational health surveillance program should be undertaken	Being complied.
	as regular exercise for all the employees, especially for those	
	engaged in handling hazardous substances.	Paing complied
9.	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise	Being complied.
	control measures including acoustic hoods, silencers, enclosures	The Refinery has provided silencers on
	etc. on all sources of noise generation. The ambient noise levels	compressor discharge, acoustic leggings on
	should conform to the standards prescribed under EPA Rules,	turbo generators & ejectors and acoustic
	1989 viz. 75 dBA (Day time) and 70 dBA (night time)	chambers at the burners.
	· · · · · · · · · · · · · · · · · · ·	The ambient noise level meets the standards.
10.	The project proponent shall also comply with all the	Complied.
	environmental protection measures and safeguards	
	recommended in the EIA and risk analysis report.	
11.	The project proponent should have a scheme upliftment in the	Being complied
	nearby villages with reference to contribution in road	Social upliftment and community development
	construction, education of children, festivals, health centers, sanitation facilities, drinking water supply, community	has been properly taken care as per IOCL's Corporate Social Responsibility Policy through
	awareness and employment to local people whenever possible	following CSR activities.
	both for technical and non technical jobs.	Promoting Sanitation
	, -	Environment Sustainability/ Renewable
		Energy Sources
		 Rural Development/ Promoting Preventive
		Healthcare/ Promotion of Sports
		 Promoting Education

		Enhancement of Vocational Skills
		Empowering Women
		Welfare of Underprivileged
12.	A separate environmental management cell equipped with full	Being Complied
	fledged laboratory facilities must be set up to carry out the	Separate Environment Management Cell is in
	environmental management and monitored functions.	place.
13.	The project authorities will provide adequate funds both	Being Implemented.
	recurring and non-recurring to implement the conditions	
	stipulated by the Ministry of Environment and Forests as well as	
	the State Government along with the implementation schedule	
	for all the conditions stipulated herein. The funds so provided	
	should not be diverted for any other purpose.	
14.	The implementation of the project vis-à-vis environmental	Being Complied.
	action plans will be monitored by Ministry's Regional Office at	Six monthly compliance reports along with
	Chandigarh / State Pollution Control Board / Central Pollution	monitoring data are being submitted as stated.
	Control Board. A six monthly compliance status report should	
	be submitted to monitoring agencies.	
15.	The project proponent should advertise in at least two local	Complied
	newspapers widely circulated in the region around the project,	
	one of which shall be in the vernacular language of the locally	
	concerned informing that the project has been accorded	
	environmental clearance by the Ministry and copies of the	
	clearance letter are available with the State Pollution Control	
	Board / Committee and may also be seen at Website of the	
	Ministry and Forests at http://www.envfor.nic.in. the	
	advertisement should be made within 7 days from the date of	
	issue of the clearance letter and a copy of the same should be	
	forwarded to the Ministry's Regional Office.	
16.	The project authorities should inform the Regional Office as well	Complied
	as the Ministry the date of financial closure and final approval of	
	the project by the concerned authorities and the date of start of	
	land development work.	

<u>Integrated Paraxylene and Purified Terphthalic Acid Projects at Panipat by M/s IOCL – Environmental Clearance MOEF, N. Delhi letter no. J.11011/52/2000-IA.II dated 30.04.2001</u>

SN	Conditions stipulated in the EC letter	Status
1	a) The gaseous emission (SO ₂ , NO _x and HC, Benzene) from the various process units should conform to the standards prescribed under environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent.	Being Complied. Emission from the stack is being monitored online and from approved lab on Bi-monthly basis. 48 stacks are connected online to CPCB/HSPCB server with parameters such as SO2, NOx, CO & PM.
	b) At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until; the control measures are rectified to achieve the desired efficiency.	Being Complied.
2	a) Adequate ambient air quality monitoring stations (SPM, SO ₂ , NO _x , HC and Benzene) should be set up in the petrochemical complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs	Being Complied. Out of 9, AAQMS two Ambient Air Monitoring stations set up in PX-PTA plant area. The location of these is finalized after consultation with HSPCB.
	b) Continuous on-line stack monitoring equipment should be installed for measurement of SO_2 and NO_x .	Being Complied. PX-PTA stacks are connected online to CPCB/SPCB server with parameters such as SO2, NOx, CO & PM.
3	 a) Fugitive emission of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored. 	Being Complied. Fugitive emission monitoring for Hydrocarbon and Benzene is done quarterly through approved agency.
	b) Sensors for detecting HC leakage should also be provided at strategic locations.	Being Complied. Hydrocarbon leak detectors installed at strategic locations.
4	a) Liquid effluent generated from the petrochemical complex should be treated comprehensively to conform to the load based standards and concentration limits prescribed under EPA rules (MINAS standards).	For Treating liquid effluent generated from Petrochemical complex separate ETP has been installed. PTA-ETP treated effluent meets the petrochemical MINAS. PTA ETP envisages Aerobic and Anaerobic Biological systems for treatment and the final effluent will meet Petrochemical MINAS.
	b) The BOD of the treated effluent should not exceed 30 mg/l at any point of time.	BOD is being maintained below 30 mg /l.
	c) The Company must undertake maximum recycling/ reusing of the treated effluent for process purposes in addition to green belt development and also adopt adequate water conservation measures.	Process Licensor M/s INVISTA has confirmed that "Recycle & Reuse" of PTA treated effluent is not feasible. PX-PTA has permission for discharge of 255m3/hr treated effluent from PTA-ETP to Thirana drain.

	d) As per the commitment given the total quantity of treated effluent discharged into Thirana drain should not exceed 255 m ³ /hr.	The discharge of PTA-ETP treated effluent into Thirana Drain is being restricted well below 255 m3/hr.
	e) The effluent quality at the discharge point must also be monitored periodically by an independent agency authorized by CPCB and report of the independent agency should be submitted to Ministry's Regional office at Chandigarh/CPCB/HSPCB.	Effluent Quality of PTA ETP is monitored monthly by an authorized independent agency and report is being submitted to HSPCB (Monthly) and to MoEF&CC (Six-Monthly).
	f) The Company shall fully abide by the Hon'ble Supreme Court orders on regulation of industrial discharge to River Yamuna and it's canals / drains.	Being Complied.
5	a) Guard ponds of sufficient holding capacity should be provided to contain the effluent during process disturbances and or ETP failure.	Guard ponds of sufficient holding capacity are provided.
	b) The concerned units must be shut down in cases of effluent quality exceeding the prescribed limits.	Being Complied.
	General Conditions	
SN	Conditions stipulated in the EC letter	Status/Action plan
1	The project authority must adhere to the stipulations made by Haryana State Pollution Control Board and State Government.	Being Complied
2	No expansion or modification of the plant should be carried out without prior approval of Ministry.	Noted
3	Data on ambient air quality and stack emissions as well as fugitive emissions of HC and Benzene from product storage tanks yard, naphtha tanks etc. must be regularly monitored and submitted to CPCB/SPCB once in 3- months and to Ministry (Regional Office, Chandigarh) one in 6-months.	Being complied. Mentioned reports are being sent to MOEF&CC once in 6 months and to HSPCB on bi-monthly basis. Stack analyzers are connected online with CPCB/HSPCB server.
4	The effluent quality before and after treatment should be regularly monitored. The frequency of monitoring and number of influent and effluent quality monitoring stations should be set up in consultation with the State PCB. The monitored data should be submitted to CPCB/ SPCB once in 3-months and to Ministry (Regional Office, Chandigarh) once in 6-months.	Being Complied Influent and Effluent quality is being monitored at various stages of Effluent Treatment Plants also Final Treated Effluent Quality parameters (pH, BOD, COD &TSS) also connected online to CPCB/HSPCB server. Mentioned reports are being sent to MOEF&CC once in 6 months and to HSPCB on monthly basis
5	Handling, manufacturing, storage and transportation of hazardous chemicals should be carried out in accordance with the Manufacture, Storage & Import of Hazardous chemicals Rules, 1989, as amended in 1991. Permissions from State and Central nodal agencies in this regard must be obtained.	Being Complied
6	Hazardous wastes, if any, must be handled and disposed as per Hazardous waste (Management and Handling) Rules, 1989. Authorization from State Pollution Control Board in this regard must be obtained.	Being complied Authorization for Hazardous Waste has been obtained from HSPCB which is valid up to 30.09.2024.

7	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase so as to avoid felling of trees	Complie	d.				
8	and pollution of water and the surroundings. The overall noise levels in and around the plant area should be kept well within the standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (day time) and 70 dBA (night time).	Being complied. Silencers are provided on compressor discharg acoustic leggings on turbo generators & ejecto and acoustic chambers at the burners. The ambient noise level meets the standards.				ejectors	
9	Occupational Health Surveillance of the workers should be done on regular basis and records maintained.	Complie	d				
10	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP and risk analysis report.	Complie	d				
11	The project proponent should have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction ,education of children festivals, health centers, sanitation facilities, drinking water supply, community awareness and employment to local people especially the displaced people whenever and wherever possible both for technical and nontechnical jobs.	Being complied Social upliftment and community development has been properly taken care as per IOCL's Corporate Social Responsibility Policy through following CSR activities. Promoting Sanitation Environment Sustainability/ Renewable Energy Sources Rural Development/ Promoting Preventive Healthcare/ Promotion of Sports Promoting Education Enhancement of Vocational Skills Empowering Women Welfare of Underprivileged Being Complied Separate environment management cell is in place.			IOCL's through		
12	A separate environmental management cell with full fledged laboratory facilities to carry out various management and monitoring functions should be set up under the control of senior executive.				s in		
13	The company must obtain ISO-14000 certification within a time frame of 5 years or so after the commissioning.	ISO-14000 certification has been obtained. Complied				l.	
14	The funds earmarked for the environmental protection measures should not be diverted for any other purpose and year-wise expenditure should be submitted to this Ministry (Regional Office, Chandigarh/CPCB/SPCB)	Being Im Year-wis FY:20 Recu rring	-	diture: FY:20	Non-recurring 3465.	Recu rring	Non-recur ring 2849

15	Six monthly status reports on the project vis-à-vis environmental measures should be submitted to this Ministry (Regional Office, Chandigarh/CPCB/SPCB.	Being Complied. Six monthly compliance reports along with monitoring data are being submitted.
16	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Chandigarh/ State Pollution Control Board/ Central Pollution Control Board. A six monthly compliance status report should be submitted to monitoring agencies.	Will be adhered to.
17	The project proponent should advertise in at least two local newspaper widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearances by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry and Forests at http://www.envfor.nic.in	Complied
18	The Project Authorities should inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied

COMPLIANCE TO ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEF FOR MS QUALITY UPGRADATION PROJECT AT PANIPAT REFINERY BY IOCL,— J-11011/9/2001-IA. II (I) DATED 06.12.2001

SN	EC Conditions	Compliance Status
1.	The company shall ensure strictly implementations / Compliance of the terms and conditions mentioned vide Ministry's letter no.	Being Complied (Stipulations are being strictly adhered for 6
	J.11011/60/2000-IA II dated 9 th April, 2001.	MMTPA EC condition).
2.	The company shall also ensure that total SO_2 emission from the Panipat Refinery (Including expansion and MS Quality Improvement Project) will not exceed 1000 kg/hr.	Being Complied SO ₂ emission from the Panipat Refinery (including expansion and MS Quality Improvement Project) is well within the limit.
3.	The company shall comply with all recommendations made by Haryana SPCB vide consent order dated 24.01.2001.	Complied.
4.	The company shall comply with all recommendations made by EMP and risk Analysis reports.	Complied.
5.	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Chandigarh / State Pollution Control Board / Central Pollution Control Board. A six monthly compliance status report should be submitted to monitoring agencies.	Being Complied. Six monthly compliance reports along with monitoring data are being submitted as stated.
6.	The project proponent should advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locally concerned informing that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry and Forests at http://envfor.nic.in the advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Ministry's Regional Office.	Complied.
7.	The project authorities should inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied.

Modification in Plant Layout of Paraxylne and Purified Terephthalic Acid (PX/PTA) Project within Panipat Refinery Complex and Integrated with Panipat Refinery (PR) and Panipat Refinery Expansion Project (PREP) by M/s IOCL — Reg. Environmental Clearance — J.11011/52/2000-IA II (I) dated 20.01.2003

SN	EC Conditions	Compliance Status
1	The company shall ensure strict implementation / compliance to the stipulations made by MOEF vide OM no. J-11011/60/2000-IA-II dated 9 th April, 2001 for expansion of Panipat Refinery from 6 MMTPA to 12 MMTPA and J-11011/52/2000-IA-II dated 30 th April, 2001 for integrated Paraxylene and Purified Terephthalic acid project at Panipat by M/s IOCL.	Being Complied.
2	Total SO_2 emission after integration of PX-PTA project with PR/PREP shall not exceed 1275 kg/hr (i.e. 1000kg/hr. for PREP and 275 kg/hr from the proposed PX/PTA/CPP Project.)	SO ₂ emission is well within the limit.
3	As per the commitment given, the total quantity of treated effluent shall not exceed 255m3/hr from the proposed integration project.	Total quantity of treated effluent discharged into Thirana Drain is maintained well below 255m ³ /hr.
4	The company shall develop green belt in an area of 75 acres as per the original plan in the PX-PTA project area.	Complied.
5	The project authorities shall also comply with all the environmental protection measures and safeguards recommended in the EIA /EMP and risk analysis report submitted while seeking environmental clearance for the PREP and PX/PTA and PX/PTA/ PR project.	Being Complied.
6	As per the recommendations made in the Risk assessment study for the composite facility i.e. PX/PTA/PREP and associated facilities carried out by M/s KLG-TNO Safety Technology Ltd., the various elements of safety management system should be reviewed and updated keeping in view the new facilities added to the Refinery Complex. These include: Process and facilities information and documentation; Process Hazard Analysis; Operation Procedures; Inspection and Maintenance and Onsite Emergency Management Plan.	Various elements of Safety Management System (SMS) has been reviewed and updated keeping in view the new facilities added. On-site Disaster Management Plan based on this Risk Analysis is also prepared which is accredited from PNGRB approved Third Party Inspection agency.
7	The project authorities must adhere to the stipulations made by the HSPCB for the PREP, PX/PTA projects and NOC granted for the installation of Captive Power Plant.	Being Complied.

P-15

COMPLIANCE TO ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEF FOR EXPANSION OF PANIPAT REFINERY (FROM 12 MMTPA TO 15 MMTPA) AND SETTING UP OF INDALIN* UNIT AT PANIPAT REFINERY COMPLEX OF IOCL, PANIPAT REFINERY HARYANA J-11011/7/2004-IA. II (I) dated 09.08.2004

SN	EC Conditions	Compliance Status
1.	The company shall ensure strict implementation /	Being Complied
	compliance to the stipulations made by MOEF vide	
	OM no. J-11001/60/2000-IA-II dated 9 th April, 2001	
	for expansion of Panipat Refinery from 6 MMTPA to	
	12 MMTPA	
2.	The gaseous emissions (SO ₂ , NO _x and HC, Benzene)	Being Complied.
	from the various process units should conform to	
	the standards prescribed under Environment	Emission from the stack is being monitored
	(Protection) Rules, 1986 or norms stipulated by the	online and from approved lab on bi-monthly
	SPCB whichever is more stringent. At no time, the	basis. All stacks are connected online to CPCB /
	emission level should go beyond the stipulated standards. In the event of failure pollution control	HSPCB server for parameters such as SO ₂ , NO _x , CO & PM.
	system(s) adopted by the unit, the respective unit	CO & PIVI.
	should not be restarted until the control measures	Gaseous emission from various process units
	are rectified to achieve the desired efficiency.	meets the prescribed standards.
3.	Adequate ambient air quality monitoring stations,	9 nos. AAQMS (5 nos. in Refinery, 2 nos. in
.	(SPM, SO_2 , NO_x and HC, Benzene) should be set up in	Panipat city, 1 no. each in Refinery township and
	the refinery complex in consultation with SPCB,	Polishing Pond area) are in operation. These
	based on occurrence of maximum ground level	were set up in consultation with HSPCB. Also
	concentration and down-wind direction of wind.	mobile van for ambient air quality monitoring is
	The monitoring network must be decided based on	in place.
	modeling exercise to represent short term GLCs.	
	Continuous on-line stack monitoring equipment	For all stacks: SO ₂ , CO, PM & NO _x analyzers are
	should be installed for measurement of SO ₂ and	available and connected with CPCB server.
	NO _x . Data on VOC should be monitored and	
	submitted to the SPCB / Ministry.	Fugitive emission monitoring for Hydrocarbon
		and benzene is done quarterly through approved
		agency.
		All reports are submitted to HSPCB as stated.
4.	Fugitive emission of HC from product storage tank	Fugitive emission monitoring for Hydrocarbon
	yard, crude oil tanks etc. must be regularly	and Benzene for product storage tanks and crude
	monitored. Sensors for detecting HC leakage should	oil storage tanks is done through approved
	also be provided at strategic locations.	agency on quarterly basis.
		Hydrocarbon detectors have been provided at
		strategic locations.
5.	The company shall also ensure that the total SO2	The total SO2 emission of Panipat Refinery is
	emissions from the Panipat Refinery after expansion	within the limit i.e. 1000 kg/hr as mentioned.
	shall not exceed i.e. 1000 kg/hr. The company shall	
	install an additional Sulphur Recovery Unit (225	Panipat Refinery has 5 nos. Sulphur Recovery
	MT/day capacity) with 99.9% efficiency and the	Units (SRUs) as detailed below and 4 (99.9 %
	entire gas generated should be amine treated to	recovery efficiency) out of 5 units are in
	reduce the SO2 emissions level from the Refinery.	operation:
		1 no. SRU: 99% efficiency ,1X115 MT/day capacity
		• 4 no. SRUs: 99.9% efficiency ,4X225 MT/day
		capacity
		capacity

SN	EC Conditions	Compliance Status
6.	As per the commitment given, there should be zero	There is no discharge of treated effluent from
	effluent discharge due to the proposed expansion.	Refinery operation into Thirana drain.
	The company should ensure that there will be no discharge of treated effluent into Thirana Drain and the treated effluent from the refinery is not discharged along with the treated effluent from PX-PTA plant. The entire treated waste water should be recycled for reuse in the plant operation and greenbelt development so as to maintain zero discharge. Further, the liquid effluent generated from the Refinery should be treated comprehensively to conform to the load based standards and	ETP-1 & ETP-2 treated effluent meets Refinery MINAS. These treated effluents are re-used as a feed to RO plant and makeup to Cooling Towers. PTA-ETP treated effluent meeting Petrochemical MINAS is discharged into Thirana Drain as per Consent-To-Operate /approvals from MOEFCC, HSPCB & Irrigation Department.
	concentration limits prescribed under Environment	
	(Protection) Act, 1986 Rules.	
7.	The IOCL shall ensure installation of continuous flow measurement devices so that only the permitted quantity of treated effluent from PX-PTA plant (255 m³/hr.) is discharged. Further, IOCL shall make all efforts to recycle and reuse the treated effluent from PX-PTA plant after commencing of the unit.	Flow meters were installed at the time of setting up PTA-ETP. At no point of time discharge of treated effluent is exceeding the prescribed limit of 255 m³/hr. Process Licensor M/s INVISTA has confirmed that "Recycle and Reuse" of PTA treated effluent is not feasible. PX-PTA has permission for discharge of 255m3/hr treated effluent from PTA-ETP to Thirana drain.
8.	Additional water requirement shall not exceed 400 m ³ /hr. The total quantity of effluent generation should not exceed 1280 m ³ /hr. as indicated in the Environment Management Plan. The treated effluent should be reused/ recycled to achieve zero discharge.	The total allowable withdrawal of fresh water as per previous EC was 3058.21 m³/hr (as per EC of 6-12 MMTPA expansion). Adding the additional quantity of 400 m³/hr., the overall total allowable water quantity is 3458.21 m3/hr. Presently, fresh water consumption of the Refinery is well below the above mentioned limits. Total quantity of effluent generation remains <1100 m³/hr. ETP-1 & ETP-2 treated effluent meets MINAS. These treated effluents from Refinery operation
		are completely re-used as a feed to RO plant and as a makeup to Cooling Towers. PTA-ETP treated effluent meeting Petrochemical MINAS is discharged into Thirana Drain as per approvals/ Consent to Operate from MOEFCC, HSPCB, and Irrigation Department.
9.	Green belt of adequate width and density should be	Greenbelts with adequate width & density were
	provided to mitigate the effects of fugitive emissions	already provided. These greenbelts were
	all around the plant. The bio-sludge from the ETP should be used as manure in the green belt	developed in consultation with the District Forest Deptt.
	development. Company shall develop greenbelt in consultation with DFO as per CPCB guidelines.	Bio-sludge from ETP is being used as manure after converting it into semi solid form.
10.	The IOCL shall make efforts to sell petroleum coke	The Refinery gives Pet-coke to a separate IOCL
	(0.9 MMTPA) to organized industries having consent	division called Marketing Division which sells the

SN	EC Conditions	Compliance Status
	from the concerned State Pollution Control Board.	same to consented/registered industries.
	Further, the Pet-coke from the Delayed Coker Unit	, 3
	should be conveyed to storage area by pipe	Pet-coke is conveyed to storage area by pipe
	conveyer system. The company should ensure to	conveyer system.
	prevent seepage in Pet-coke stockpile / storage area	
	to prevent soil and ground water pollution.	
11.	The oily sludge generated from the refinery	The raw oily sludge generated from the Refinery
	operation should be subjected to melting pit	is subjected to Oil recovery/Melting Pit treatment
	treatment for recovery of oil. The recovered oil	for recovery of oil. The recovered oil is recycled
	should be recycled. The residual oily sludge should	back with crude oil for processing.
	be disposed off in the HDPE lined pits.	- The residual sludge is disposed-off through
		confined Bio-remediation.
		- Part of the sludge is processed in Coker unit.
12	The common charile adept may aded steres for	The Mayaded Dullets are in apprehing
12.	The company should adopt mounded storage for LPG. The project authorities shall also comply with	The Mounded Bullets are in operation.
	all the environmental protection measures and	
	safeguards recommended in the EIA/EMP and risk	
	analysis report.	
13.	Occupational Health Surveillance of the workers	The Refinery has a full-fledged Occupational
	should done on a regular basis and records	Health Centre (OHC) in operation. The OHC
	maintained as per the Factories Act.	carries out health surveillance of the workers on
	·	a regular basis and records are maintained.
Gen	eral conditions	
1.	The project authorities must strictly adhere to the	Complied
	stipulations made by the Haryana State Pollution	
	Control Board and the State Government.	
2.	No further expansion or modernization in the plant	Noted.
	should be carried out without prior approval of the	
	Ministry of Environment & Forests.	
3.	At no time, the emissions should go beyond the	Being Complied.
	prescribed standards. In the event of failure of any pollution control system adopted by the units, the	Emission from the stack is being monitored
	respective unit should be immediately put out of	online and from approved lab on bi-monthly basis. All stacks are connected online to
	operation and should not be restarted until the	CPCB/HSPCB server with parameters such as SO ₂ ,
	desired efficiency has been achieved.	NO _x , CO & PM.
4.	The overall noise levels in and around plant area	The Refinery has provided silencers on
	should be kept well within the standards (85 dBA) by	compressor discharge, acoustic leggings on turbo
	providing noise control measures including acoustic	generators & ejectors and acoustic chambers at
	hoods, silencers, enclosures etc. on all sources of	the burners.
	noise generation. The ambient noise levels should	
	conform to the standards prescribed under EPA	The ambient noise level meets the standards.
	Rules, 1989 viz 75 dBA (day time) and 70 dBA (night	
	time).	
5.	The project authorities must strictly comply with the	Complied.
	provisions made in Manufacture, Storage and	
	Import of Hazardous Chemicals Rules, 1989 as	
	amended in 2000 for handling of hazardous	
	chemicals etc. Necessary approvals from Chief	
	Controller of Explosives must be obtained before	
6	commission of the project.	Complied
6.	The project authorities must strictly comply with the	Complied.
	rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the	
	disposar of flazardous wastes in accordance with the	

SN	EC Conditions	Compliance Status
	Hazardous Waste (Management & Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections / treatment / storage / disposal of hazardous waste.	
7.	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Being Implemented.
8.	The stipulated conditions will be monitored by the Regional of this Ministry at Chandigarh / Central Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly.	Six monthly compliance report on EC conditions is sent along with various monitoring reports as stated.
9.	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www/envfor.nic.in This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office.	Complied.
10.	The project authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied

ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR BS-VI FUEL QUALITY UP-GRADATION AND EXPANSION OF PX/PTA PLANT AT PANIPAT REFINERY & PETROCHEMICAL COMPLEX (PRPC), PANIPAT (HARYANA) BY M/SINDIAN OIL CORPORATION LIMITED - ENVIRONMENTAL CLEARANCE - REG.

(Ref. No. J-11011/177/2016-IA- II (I) dated 26.03.2018)

SI.	EC Conditions	Compliance Status
No.		
(i)	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Consent to Operate for BS-VI facilities including Panipat Refinery & PX-PTA Petrochemical Complex has been received from HSPCB.
(ii)	As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	There is no discharge of treated effluent from Refinery operations into Thirana drain. ETP-1 & ETP-2 treated effluent meets Refinery MINAS. These treated effluents are re-used as a feed to RO plant and makeup to Cooling Towers. PTA-ETP treated effluent meeting Petrochemical MINAS is discharged into Thirana Drain as per
		Consent-To-Operate/approvals from MOEFCC, HSPCB & Irrigation Department.
(iii)	In case of PX/PTA expansion project, there shall not be any increase in effluent discharge and the treated effluent of 255 cum/hr shall continue to be discharged to the existing Thirana Drain.	There will be no increase in treated effluent discharge into Thirana Drain post PX-PTA capacity expansion project.
(iv)	Necessary authorization required under the Hazardous and Other Wastes Management Rules, 2016 shall be obtained and the previous contained in the Rules shall be strictly adhered to.	Authorization under Hazardous and Other Wastes Management Rules, 2016 received from HSPCB on 16.06.2020 which is valid upto 30.09.2024.
(v)	Total SO ₂ emissions from the Refinery (including BS-VI Upgradation project) shall not exceed 1100 kg/hr whereas, for the PX/PTA plant after expansion, total SO ₂ emissions shall not exceed 375 kg/hr. Accordingly, total SO ₂ emissions from the Refinery Complex shall be limited to 1475 hg/hr.	${\sf SO}_2$ emissions from the Refinery (including BS-VI Up gradation project) is within 1100 kg/hr. ${\sf SO}_2$ emissions from the PX-PTA petrochemical project is well within 275 Kg/hr. PX-PTA expansion project is under implementation. Post commissioning, SO2 emission will be maintained below 375 Kg/hr.
(vi)	National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21 st July, 2010 and amended from time to time shall be followed.	Being complied.
(vii)	To control source and the fugitive emissions, suitable pollution control devices shall be installed with different stacks (attached to DHDT, HGU, Prime G) to meet the prescribed norms and /or the NAAQS. The gaseous emissions shall be dispersed through stacks of adequate height as per CPCB / SPCB guidelines.	For BS-VI fuel quality up gradation project being complied. Post commissioning of the PX-PTA capacity expansion project, same shall be ensured.
(viii)	Total fresh water requirement shall not exceed 354 m3/hr (8500 KLD) to be met from Munak Regulator. Necessary permission in this regard shall be obtained from the concerned regulatory authority.	Complied
(ix)	Process effluent/any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed	Being complied

SI.	EC Conditions	Compliance Status
No.		
	through guard pond.	
(x)	Hazardous chemicals shall be stored in tanks, tank farms,	Complied
	drums, carboys etc. Flame arresters shall be provided on	
(1)	tank farm, and solvent transfer to be done through pumps.	
(xi)	Process organic residue and spent carbon, if any, shall be	Complied.
	sent to cement industries. ETP sludge, process inorganic &	
	evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement	Point mixed fuel (Liquid (Gas) firing in the Boiler
	industry.	Being mixed fuel (Liquid +Gas) firing in the Boiler, there will be no ash generation.
(xii)	The Company shall strictly comply with the rules and	Being complied
(XII)	guidelines under Manufacture, Storage and Import of	being complica
	Hazardous Chemicals (MSIHC) Rules, 1989 as amended time	
	to time. All transportation of Hazardous Chemicals shall be	
	as per the Motor Vehicle Act (MVA), 1989.	
(xiii)	Fly ash should be stored separately as per CPCB guidelines	Not Applicable
` ′	so that it should not adversely affect the air quality,	
	becoming air borne by wind or water regime during rainy	
	season by flowing along with the storm water. Direct	
	exposure to workers to fly ash & dust should be avoided.	
(xiv)	The company shall undertake waste minimization measures	Complied
	as below:	
	(a) Metering and control of quantities of active ingredients	
	to minimize waste.	
	(b) Reuse of by-products from the process as raw material	
	or as raw material substitutes in other processes.	
	(c) Use of automated filling to minimize spillage.	
	(d) Use of Close Feed system into batch reactors.	
	(e) Venting equipment through vapour recovery system.	
	(f) Use of high pressure hoses for equipment clearing to reduce wastewater generation.	
(xv)	The green belt of 5-10 m width shall be developed in more	Complied
(^V)	than 33% of the total project area, mainly along the plant	Complica
	periphery, in downward wind direction, and along road	
	sides etc. Selection of plant species shall be as per the CPCB	
	guidelines in consultation with the State Forest Department.	
(xvi)	At least 2.5% of the total project cost shall be allocated for	Complied
` ′	Enterprise Social Commitment and item-wise details along	·
	with time bound action plan shall be prepared and	
	submitted to the Ministry's Regional Office.	
(xvii)	For the DG sets, emission limits and the stack height shall be	Complied
	in conformity with the extant regulations and the CPCB	
	guidelines. Acoustic enclosure shall be provided to DG set	
	for controlling the noise pollution.	
(xviii)	The unit shall make the arrangement for protection of	Complied
	possible fire hazards during manufacturing process in	
	material handling. Fire fighting system shall be as per the	
	norms.	
(xix)	Continuous online (24X7) monitoring system for stack	Stack analyzers are installed and connected to
	emission shall be installed for measurement of flue gas	CPCB/HSPCB server.
	discharge and the pollutants concentration, and the data to	
	be transmitted to the CPCB and SPCB server.	
	For online continuous monitoring of effluent, the unit shall	
	install web camera with night vision capability and flow	Complied
	mistan web camera with hight vision capability and now	Compiled

SI.	EC Conditions	Compliance Status
No.		
	meters in the channel/drain carrying effluent within the	
	premises. In case of the treated effluent to be utilized for	
	irrigation/gardening, real time monitoring system shall be	
	installed at the ETP outlet.	
(xx)	Occupational health surveillance of the workers shall be	Being complied
	done on a regular basis and records maintained as per the	
	Factories Act.	
Genera	l Conditions	
(i)	The project authorities must strictly adhere to the	Complied
	stipulations made by the State Pollution Control Board,	
	Central Pollution Control Board, State Government and any	
	other statutory authority.	
(ii)	No further expansion or modifications in the plant shall be	Noted
` '	carried out without prior approval of the Ministry of	
	Environment, Forest and Climate Change. In case of	
	deviations or alternations in the project proposal from	
	those submitted to this Ministry for clearance, a fresh	
	reference shall be made to the Ministry to assess the	
	adequacy of conditions imposed and to add additional	
	environmental protection measures required, if any.	
(iii)	The locations of ambient air quality monitoring stations	Complied
(111)	shall be decided in consultation with State Pollution Control	2 nos. of additional CAAQMS under BS-VI fuel quality
	Board (SPCB) and it shall be ensured that at least one	
	1	up-gradation project is installed in addition to existing 7 nos. of CAAQMS.
	station each is installed in the upwind and downwind	7 Hos. of CAAQIVIS.
	direction as well as where maximum ground level	
(:)	concentrations are anticipated.	
(iv)	The National Ambient Air Quality Emission Standards issued	Complied
	by the Ministry vide G.S.R. No. 826 (E) dated 16 th	
	November, 2009 shall be followed.	- "
(v)	The overall noise levels in and around the plant area shall	Complied
	be kept well within the standards by providing noise control	
	measures including acoustic hoods, silencers, enclosures	
	etc. on all sources of noise generation. The ambient noise	
	levels shall conform to the standards prescribed under	
	Environmental (Protection) Act, 1986 Rules, 1989 viz. 75	
	dBA (day time) and 70 dBA (night time).	
(vi)	The Company shall harvest rainwater from the roof tops of	Complied
	the building and storm water drains to recharge the ground	
	water and us the same water for the process activities of	
	the project to conserve fresh water.	
(vii)	Training shall be imparted to all employees on safety and	Being complied
	health aspects of chemicals handling. Pre-employment and	
	routine periodical medical examinations for all employees	
	shall be undertaken on regular basis. Training to all	
	employees on handling of chemicals shall be imparted.	
(viii)	The company shall also comply with all the environmental	Shall be complied
	protection measures and safeguards proposed in the	
	documents submitted to the Ministry. All the	
	recommendations made in the EIA/EMP in respect of	
	environmental management and risk mitigation measures	
	relating to the project shall be implemented.	
(ix)	The company shall undertake all relevant measures for	Complied
	improving the socio-economic conditions of the surrounding	
	area. ESC activities shall be undertaken by involving local	
	area. Loc activities shall be undertaken by involving local	

SI.	EC Conditions	Compliance Status
No.		
	villages and administration.	
(x)	The company shall undertake eco-developmental measures	Complied
	including community welfare measures in the project area	
	for the overall improvement of the environment.	
(xi)	The company shall earmark sufficient funds towards capital	Being implemented
	cost and recurring cost per annum to implement the	
	conditions stipulated by the Ministry of Environment, Forest	
	and Climate Change as well as the State Government along	
	with the implementation schedule for all the conditions	
	stipulated herein. The funds so earmarked for environment	
	management/ pollution control measures shall not be	
	diverted for any other purpose.	
(xii)	A copy of the clearance letter shall be sent by the project	Complied
	proponent to concerned Panchayat, Zila Parishad/Municipal	
	Corporation, Urban Local Body and the local NGO, if any,	
	from whom suggestions/representations, if any, were	
	received while processing the proposal.	
(xiii)	The project proponent shall also submit six monthly reports	Six monthly EC compliance report is submitted as
	on the status of compliance of the stipulated Environmental	stated.
	Clearance conditions including results of monitored data	It is also posted on the website of the company.
	(both in hard copies as well as by e-mail) to the respective	
	Regional Office of MoEF&CC, the respective Zonal Office of	
	CPCB and SPCB. A copy of Environmental Clearance and six	
	monthly compliance status report shall be posted on the	
	website to the company.	
(xiv)	The environmental statement for each financial year ending	This is being complied and will continue to do so in
	31 st March in Form-V as is mandated shall be submitted to	future.
	the concerned State Pollution Control Board as prescribed	
	under the Environment (Protection) Rules, 1986, as	
	amended subsequently, shall also be put on the website of	
	the company along with the status of compliance of	
	environmental clearance conditions and shall also be sent to	
	the respective Regional Offices of MoEF&CC by e-mail.	
(xv)	The project proponent shall inform the public that the	Complied and informed
	project has been accorded environmental clearance by the	
	Ministry and copies of the clearance letter are available	
	with the SPCB/Committee and may also be seen at Website	
	of the Ministry at http://moef.nic.in . This shall be advertised	
	within seven days from the date of issue of the clearance	
	letter, at least in two local newspapers that are widely	
	circulated in the region of which one shall be in the	
	vernacular language of the locality concerned and a copy of	
	the same shall be forwarded to the concerned Regional	
,	Office of the Ministry.	
(xvi)	The project authorities shall inform the Regional Office as	Complied
	well as the Ministry, the date of financial closure and final	
	approval of the project by the concerned authorities and	
	the date of start of the project.	

ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR INSTALLATION OF 100 KLPD LIGNO-CELLULOSIC 2G ETHANOL PLANT AT BAHOLI, BLOCK MADLAUDA, PANIPAT REFINERY ROAD, DISTRICT PANIPAT (HARYANA) BY M/S INDIAN OIL CORPORATION LIMITED - ENVIRONMENTAL CLEARANCE - REG.

(Ref. No. IA-J-11011/43/2018-IA- II (I) dated 13.11.2019)

SN	EC Conditions	Compliance Status
Gen	eral Conditions	
1.	The project authorities must strictly adhere to the stipulations made by	Shall be adhered
	State Pollution Control Board (SPCB), State Govt. and/or any other statutory authority.	
2.	No further expansion or modifications in the plant shall be carried out	Noted & Shall be adhered
	without prior approval of the Ministry of Environment, Forest and Climate	
	Change. In case of deviations or alterations in the project proposal from	
	those submitted to this ministry for clearance a fresh reference should be	
	made to the ministry to assess the adequacy of conditions imposed and to	
2	add additional environmental protection measures required, if any.	M/ill be consulted
3.	The location of Ambient Air Quality Monitoring Stations shall be decided in consultation with the State Pollution Control Board and it shall be ensured	Will be complied.
	that at least one stations each is installed in upwind and downwind direction	
	as well as where maximum ground level concentrations are anticipated.	
4.	The Nation Ambient Air Quality Emission Standards issued by the Ministry	Shall be complied
7.	vide G.S.R No. 826 (E) dated 16 th November, 2009 shall be complied with.	Shan be complica
5.	The overall noise levels in and around the plant area shall be kept well	Will be complied.
	within the standards by providing noise control measures including acoustic	'
	hoods, silencers, enclosures etc. on all source of noise generation. The	
	ambient noise levels shall confirm to the standards prescribed under the	
	Environment (Protection) Act, 1986 and the rules made there under.	
6.	The company shall harvest rain water from the rooftops of the buildings and	Will be complied.
	storm water drains to recharge the ground water and utilize the same for	
	different industrial operations inside the plant.	
7.	Training shall be imparted to all employees on safety and health aspects of	Will be complied
	chemical handling. Pre-employment and routine periodical medical	
	examinations for all employees shall be undertaken on regular basis.	
•	Training to all employees on handling of chemicals shall be imparted.	AACH la a a a a a di a d
8.	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the ministry. All	Will be complied.
	the recommendations made in the EIA/EMP in respect of environmental	
	management risk mitigation measures and public hearing shall be	
	implemented.	
9.	The company shall undertake all measures for improving socio-economic	Will be complied
	conditions of the surrounding area. CER activities shall be undertaken by	
	involving local villagers, administration and other stake holders. Also eco-	
	developmental shall be undertaken for overall improvement of the	
	environment.	
10.	A separate Environmental Management Cell equipped with full fledged	Will be complied
	laboratory facilities shall be set up to carry out the Environmental	
	Management and Monitoring functions.	
11.	The company shall earmark sufficient funds towards capital cost and	Being implemented
	recurring cost per annum to implement the conditions stipulated by the	
	Ministry of Environment, Forests and Climate Change as well as the State	
	Government along with the implementation schedule for all the conditions	
	stipulated herein. The funds so earmarked for environment	
	management/pollution control measures shall not be diverted for any other	
	purpose.	

12.	A copy of the clearance letter shall be sent by the project proponent to the	Complied
	concerned Panchayat, Zila Parishad/Municipal corporation, urban local body	
	and local NGO, if any, from whom suggestion/representation, if any, were	
	received while processing the proposal.	
13.	The project proponent shall also submit six monthly reports on the status of	Complied
	compliance of the stipulated Environmental Clearance conditions including	
	results of monitored data (Both in hard copy as well as by e-mail) to the	
	respective Regional Office of MoEF&CC, the respective Zonal office of CPCB	
	and SPCB. A copy of Environmental Clearance and six monthly compliance	
	status reports shall be posted on the website of the company.	
14.	The environmental statement for each financial year ending 31 st March in	Will be complied
	Form-V as is mandated shall be submitted to the concerned State Pollution	
	Control Board as prescribed under the Environment (Protection) Rules,	
	1986, as amended subsequently, shall also be put on the website of the	
	company along with the status of compliance of Environmental Clearance	
	conditions and shall also be sent to the respective Regional Offices of	
	MoEF&CC by e-mail.	
15.	The project proponent shall inform the public that the project has been	Complied
	accorded environmental clearance by the Ministry and copies of the	
	clearance letter are available with the SPCB/Committee and may also be	
	seen at Website of the Ministry at http://moef.nic.in . This shall be	
	advertised within seven days from the date of issue of clearance letter, at	
	least in two local newspapers that are widely circulated in the region of	
	which one shall be in the vernacular language of the locality concerned and	
	a copy of the same shall be forwarded to the Regional Office of the Ministry.	
Coo	ifia Canditiana	
1.	cific Conditions The project proponent shall install 10 TPD 2G Ethanol demo plant for R&D	Will be complied
1.	purpose.	Will be complied.
2.	Prior approval shall be obtained from the Petroleum & Explosive Safety	Will be complied.
	Organization (PESO) for the site and layout plan submitted to this ministry	Will be complied.
	along with the proposal for EC. In case of any changes therein post PESO	
	approval, the proposal shall require fresh appraisal by the sectoral EAC.	
3.	Necessary permission as mandated under the Water (Prevention and	CTE dated 10.1.2020
	Control of Pollution) Act, 1974 and the Air (Prevention and Control of	received
	Pollution) Act, 1981 as applicable from time to time shall be obtained from	
	the State Pollution Control Board as required.	
4.	As already committed by the project proponent, Zero Liquid Discharge shall	Will be complied.
	be ensured and no waste / treated water shall be discharged outside the	'
	premises.	
5.	Sludge management plan shall be formulated and ensured.	Will be complied.
6.	Ash management shall be ensured by utilizing for manufacturing bricks.	Will be complied.
7.	Necessary authorization required under the Hazardous and Other Wastes	Will be complied.
	(Management and Trans-Boundary Movement Rules ,2016 Solid Waste	
	Management Rules ,2016 shall be obtained and the provisions contained in	
	the Rules shall be strictly adhered to.	
8.	To control source and the fugitive emissions, suitable pollution control	Will be complied.
	devices shall be installed to meet the prescribed norms and/or the NAAQS.	
	The gaseous emissions shall be dispersed through stack of adequate height	
	as per CPCB/SPCB guidelines.	
9.	Total fresh water requirement shall not exceed 109 m³/hr., proposed to be	Will be complied.
	met from Munak Regulator on Western Yamuna Canal. Prior permission	
	shall be obtained from the concerned regulatory authority.	
10.	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys	Will be complied.
	etc. Flame arrester shall be provided on tank farm and the solvent transfer	
	The state of the s	
	through pumps.	

11.	Process organic residue and spent carbon, if any shall be sent to cement	Will be complied.
	industries. ETP sludge, process inorganic and evaporation salt shall be	
	disposed off to the TSDF.	
12.	The company shall strictly comply with the rules and guidelines under	
	Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules,	Will be complied.
	1989 as mentioned time to time. All transportation of Hazardous Chemicals	
	shall be as per the Motor Vehicles Act, 1989.	
13.	The company shall undertake waste minimization measures as below:-	Project under
	(a)Metering and control of quantities of active ingredients to minimize	construction.
	waste.	
	(b)Reuse of by-products from the process as raw materials or as raw	
	materials substitutes in other processes.	
	(c) Use of automatic filling to avoid spillage.	
	(d)Use of Close Feed System into batch reactors.	
	(e) Venting equipment through vapor recovery system	
	(f) Use of high pressure hoses for equipment clearing to reduce waste water	
1.0	generation.	M/ill be seemalied
14.	The green belt of 5-10 m width shall be developed in more than 33% of the	Will be complied.
	total project area, mainly along the plant periphery, in downward wind	
	direction, and along road sides etc. Selection of plant species shall be done	
15.	as per the CPCB guidelines in consultation with the State Forest Department. All the commitments made regarding issues raised during the public hearing	Will be complied.
15.	/ consultation meeting shall be satisfactorily implemented.	will be complied.
16.	At least 1% of the total project cost shall be allocated for Corporate	Will be complied.
10.	Environment Responsibility (CER) and item wise details along with time	will be complied.
	bound action plan shall be prepared and submitted to the Ministry's	
	Regional Office.	
17.	For the DG sets, emission limits and stack height shall be in conformity with	Will be complied.
	the extant regulations and the CPCB regulations. Acoustic enclosures shall	Trin 20 compiled.
	be provided to the DG set for controlling the noise pollution.	
18.	The unit shall make the arrangement for protection of possible fire hazards	Will be ensured after
	during manufacturing process in material handling. Fire fighting system shall	project commissioning of
	be as per the norms.	the plant.
19.	Occupational Health Surveillance of the workers shall be done on a regular	Will be complied
	basis and records maintained as per the Factories Act.	·
20.	There shall be adequate space inside the plant premises earmarked for	Will be ensured after
	parking of vehicles for raw materials and finished products, and no parking	project commissioning of
	to be allowed outside on public places.	the plant.
21.	Storage of raw material shall be either stored in silos or in covered areas to	Will be ensured after
	prevent dust pollution and other fugitive emissions.	project commissioning of
		the plant.
22.	Continuous online (24x7) monitoring system for stack emissions shall be	Will be ensured
	installed for measurement of flue gas discharge and the pollutants	
	concentration, and the data to be transmitted to the CPCB and SPCB server.	
	For online continuous monitoring of effluent, the unit shall install web	
	camera with night vision capability and flow meters in the channel /drain	
	carrying effluent within the premises.	

ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR SETTING UP 128 KL PER DAY ETHANOL PRODUCTION PLANT BY M/S INDIAN OIL CORPORATION LTD. (IOCL) IN PANIPAT REFINERY & PETROCHEMICAL COMPLEX AT PANIPAT, HARYANA - ENVIRONMENTAL CLEARANCE – REGARDING

(Ref. No. J-11011/78/2018-IA- II (I) dated 25.11.2019)

SN	EC Conditions	Compliance Status
Gen	eral Conditions	
1.	The project authorities must strictly adhere to the stipulations made State Pollution Control Board (SPCB), State Govt. and/or any other statute authority.	
2.	No further expansion or modifications in the plant shall be carried of without prior approval of the Ministry of Environment, Forest and Clima Change. In case of deviations or alterations in the project proposal from those submitted to this ministry for clearance a fresh reference should made to the ministry to assess the adequacy of conditions imposed and add additional environmental protection measures required, if any.	ate om be
3.	The location of Ambient Air Quality Monitoring Stations shall be decided consultation with the State Pollution Control Board and it shall be ensur that at least one stations each is installed in upwind and downwind directias well as where maximum ground level concentrations are anticipated.	ed .
4.	The Nation Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R No. 826 (E) dated 16 th November, 2009 shall be complied with.	Will be complied
5.	The overall noise levels in and around the plant area shall be kept w within the standards by providing noise control measures including acous hoods, silencers, enclosures etc. on all source of noise generation. T ambient noise levels shall confirm to the standards prescribed under t Environment (Protection) Act, 1986 and the rules made there under.	tic he
6.	The company shall harvest rain water from the rooftops of the buildings a storm water drains to recharge the ground water and utilize the same fulfiferent industrial operations inside the plant.	·
7.	Training shall be imparted to all employees on safety and health aspects chemical handling. Pre-employment and routine periodical medic examinations for all employees shall be undertaken on regular bas Training to all employees on handling of chemicals shall be imparted.	cal
8.	The company shall comply with all the environmental protection measure and safeguards proposed in the documents submitted to the ministry. The recommendations made in the EIA/EMP in respect of environment management risk mitigation measures and public hearing shall implemented.	All tal
9.	The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CER activities shall be undertaken involving local villagers, administration and other stake holders. Also expected developmental shall be undertaken for overall improvement of the environment.	by co-
10.	A separate Environmental Management Cell equipped with full fledg laboratory facilities shall be set up to carry out the Environmen Management and Monitoring functions.	·
11.	The company shall earmark sufficient funds towards capital cost a recurring cost per annum to implement the conditions stipulated by t Ministry of Environment, Forests and Climate Change as well as the Sta Government along with the implementation schedule for all the condition stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other	he ite ins institution in the in

	purpose.	
12.	A copy of the clearance letter shall be sent by the project proponent to the	Complied
	concerned Panchayat, Zila Parishad/Municipal corporation , urban local	- Compiler
	body and local NGO, if any, from whom suggestion/representation, if any,	
	were received while processing the proposal.	
13.	The project proponent shall also submit six monthly reports on the status of	Will be Complied
	compliance of the stipulated Environmental Clearance conditions including	,
	results of monitored data (Both in hard copy as well as by e-mail) to the	
	respective Regional Office of MoEF&CC, the respective Zonal office of CPCB	
	and SPCB. A copy of Environmental Clearance and six monthly compliance	
	status reports shall be posted on the website of the company.	
14.	The environmental statement for each financial year ending 31 st March in	Will be Complied
	Form-V as is mandated shall be submitted to the concerned State Pollution	tom be complied
	Control Board as prescribed under the Environment (Protection) Rules,	
	1986, as amended subsequently, shall also be put on the website of the	
	company along with the status of compliance of Environmental Clearance	
	conditions and shall also be sent to the respective Regional Offices of	
	MoEF&CC by e-mail.	
15.	The project proponent shall inform the public that the project has been	Complied
	accorded environmental clearance by the Ministry and copies of the	Complica
	clearance letter are available with the SPCB/Committee and may also be	
	seen at Website of the Ministry at http://moef.nic.in . This shall be	
	advertised within seven days from the date of issue of clearance letter, at	
	least in two local newspapers that are widely circulated in the region of	
	which one shall be in the vernacular language of the locality concerned and	
	a copy of the same shall be forwarded to the Regional Office of the Ministry.	
	a copy of the same shall be forwarded to the Regional office of the Willistry.	
Spec	cific Conditions	
1.	Necessary permission as mandated under the Water (Prevention and	Complied
	Control of Pollution) Act, 1974 and the Air (Prevention and Control of	
	Pollution) Act, 1981 as applicable from time to time shall be obtained from	
	the State Pollution Control Board as required.	
2.	Effluent of 209 cum per day shall be treated in existing Effluent Treatment	Will be ensured
	Plant of Panipat Refinery and Panipat Refinery will not exceed the	
	permissible discharge as allowed to Panipat Refinery while granting	
	environmental clearance vide letter dated 26 th March 2018.	
3.	Necessary authorization required under the Hazardous and Other Wastes	Will be complied
	(Management and Trans-Boundary Movement Rules ,2016 Solid Waste	
	Management Rules ,2016 shall be obtained and the provisions contained in	
	the Rules shall be strictly adhered to.	
4.	To control source and the fugitive emissions, suitable pollution control	Will be complied
	devices shall be installed to meet the prescribed norms and/or the NAAQS.	,
	The gaseous emissions shall be dispersed through stack of adequate height	
	as per CPCB/SPCB guidelines.	
5.	Odour shall be prevented at the source and effective odour management	Will be complied
	scheme shall be implemented.	·
6.	Total fresh water requirement shall not exceed 3600 cum/day, proposed to	Will be ensured
-	be met from Munak Regulator on Western Yamuna Canal. Prior permission	
	shall be obtained from the concerned regulatory authority.	
7.	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys	Will be complied
	etc. Flame arrester shall be provided on tank farm and the solvent transfer	se complica
	through pumps.	
8.	Process organic residue and spent carbon, if any shall be sent to cement	Will be complied
u.	industries. ETP sludge, process inorganic and evaporation salt shall be	will be complied
	disposed off to the TSDF.	
9.	The company shall strictly comply with the rules and guidelines under	Continuous, Will be

	Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules,	complied
	1989 as mentioned time to time. All transportation of Hazardous Chemicals	·
	shall be as per the Motor Vehicles Act, 1989.	
10.	The company shall undertake waste minimization measures as below:-	Project under
	(a)Metering and control of quantities of active ingredients to minimize	construction
	waste.	
	(b)Reuse of by-products from the process as raw materials or as raw	
	materials substitutes in other processes.	
	(c) Use of automatic filling to avoid spillage.	
	(d)Use of Close Feed System into batch reactors.	
	(e)Venting equipment through vapor recovery system	
	(f) Use of high pressure hoses for equipment clearing to reduce waste water	
	generation.	
11.	The green belt of 5-10 m width shall be developed in more than 33% of the	Will be complied
	total project area, mainly along the plant periphery, in downward wind	·
	direction, and along road sides etc. Selection of plant species shall be done	
	as per the CPCB guidelines in consultation with the State Forest	
	Department.	
12.	All the commitments made regarding issues raised during the public hearing	Will be complied
	/ consultation meeting shall be satisfactorily implemented.	
13.	At least 1% of the total project cost shall be allocated for Corporate	Will be complied
	Environment Responsibility (CER) and item wise details along with time	
	bound action plan shall be prepared and submitted to the Ministry's	
	Regional Office. Priority shall be given for construction/repair of the village	
	roads.	
14.	For the DG sets, emission limits and stack height shall be in conformity with	Will be complied
	the extant regulations and the CPCB regulations. Acoustic enclosures shall	
	be provided to the DG set for controlling the noise pollution.	
15.	The unit shall make the arrangement for protection of possible fire hazards	Will be ensured after
	during manufacturing process in material handling. Fire fighting system shall	commissioning of the
	be as per the norms.	plant
16.	Occupational Health Surveillance of the workers shall be done on a regular	Will be complied
	basis and records maintained as per the Factories Act.	
17.	There shall be adequate space inside the plant premises earmarked for	Will be ensured after
	parking of vehicles for raw materials and finished products, and no parking	commissioning of the
	to be allowed outside on public places.	plant
18.	Continuous online (24x7) monitoring system for stack emissions shall be	Will be complied
	installed for measurement of flue gas discharge and the pollutants	
	concentration, and the data to be transmitted to the CPCB and SPCB server.	
	For online continuous monitoring of effluent, the unit shall install web	
	camera with night vision capability and flow meters in the channel /drain	
	carrying effluent within the premises.	
19.	The unit shall comply with NGT order and shall not damage environment	Will be complied
	any further including ground water.	
20.	The unit shall take precautionary measures for control of VOCs and shall	Will be complied
1 1	follow CPCB guideline and norms.	I

ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MOEFCC FOR PANIPAT REFINERY CAPACITY EXPANSION FROM EXISTING 15 MMTPA TO 25 MMTPA WITHIN THE EXISTING REFINERY COMPLEX, ENVIRONMENTAL CLEARANCE – REGARDING (EC. Identification, No., EC210010HR142882; File, No., I-11011/177/2016-IAII/I), dated

(EC Identification No. EC21A010HR142882; File No. J-11011/177/2016-IAII(I) dated 03.12.2021)

SN	EC Conditions	Compliance Status
	Specific Conditions	
(i).	The project shall conform to ZLD.	Noted
(ii).	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.	Will be complied
(iii).	The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18th March, 2008 and G.S.R.595(E) dated 21st August, 2009 as amended from time to time, shall be followed.	Noted
(iv).	Volatile organic compounds (VOCs)/Fugitive emissions shall be controlled at 99.997% with effective chillers/modern technology. For emission control and management, use of FG/NG in heater as fuel, adequate stack height, use of Low NOX burners in heater & boiler, continuous stack monitoring, Sulphur recovery plant, etc. shall be installed/ensured.	Will be complied
(v).	Total water requirement is 1,62,864 m3/day of which fresh water requirement of 98880 m3/day will be met from Western Yamuna Canal. Necessary permission in this regard shall be obtained from the concerned regulatory authority.	Will be complied
(vi).	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Will be complied
(vii).	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.	Will be complied
(viii).	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	Will be complied
(ix).	Fly ash should be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust should be avoided. The ash from boiler shall be sold to brick manufacturers/cement industry.	Mixed fuel (Liquid +Gas) will be fired in the Boiler; there will be no ash generation.
(x).	The company shall undertake waste minimization measures as below: - a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of Close Feed system into batch reactors. e. Venting equipment through vapour recovery system.	Will be complied
	f. Use of high pressure hoses for equipment clearing to reduce wastewater generation.	

(xi).	The green belt of 5-10 m width shall be developed in the total proje area, mainly along the plant periphery, in downward wind directio and along road sides etc. The project proponent shall ensure 33 greenbelt area vis-à-vis the project area through afforestation in the	n, % ne
	degraded area. The Selection of plant species shall be as per the CPC	CB
/:\	guidelines in consultation with the State Forest Department.	d Millian and Bad
(xii).	As per the Ministry's OM dated 30.09.2020 superseding the OM date 01.05.2018 regarding the Corporate Environmental Responsibility, ar	-
	as per the action plan proposed by the project proponent to addre	
	the socioeconomic and environmental issues in the study area, the	
	project proponent, as committed, shall provide education funds	
	technical training centers/ support in nearby village's schools, suppo	
	in health care facilities, drinking water supply and funds for	
	miscellaneous activities like solar street lights, battery, solar panel etc	
	in the nearby villages. The action plan shall to be completed within times proposed.	ne
(xiii).	For the DG sets, emission limits and the stack height shall be	in Complied
	conformity with the extant regulations and the CPCB guideline	-
	Acoustic enclosure shall be provided to DG set for controlling the noise	se
	pollution.	
(xiv).	The unit shall make the arrangement for protection of possible file	-
	hazards during manufacturing process in material handling. Firefightir system shall be as per the norms.	ng
(xv).	Continuous online (24x7) monitoring system for stack emissions shall be	e Will be complied
(۸۷).	installed for measurement of flue gas discharge and the pollutan	
	concentration, and the data to be transmitted to the CPCB and SPC	
	server. For online continuous monitoring of effluent, the unit sha	
	install web camera with night vision capability and flow meters in the	
	channel/drain carrying effluent within the premises. In case of the	
	treated effluent to be utilized for irrigation/gardening, real tim	ne
(sa di)	monitoring system shall be installed at the ETP outlet.	a Mill be seconded
(xvi).	Occupational health surveillance of the workers shall be done on regular basis and records maintained as per the Factories Act.	a Will be complied
(xvii).	Process safety and risk assessment studies shall be further carried or	ut Will be complied
(*****)*	using advanced models, and the mitigating measures shall be	-
	undertaken/implemented accordingly.	
(xviii).	The PP should improve the efficiency of ETP Plant and the water	
	discharge should be as per prescribed CPCB Norms. They should als	60
	install 24x7 hours monitoring system (of the discharge) and the same	ne
C = 1	should be connected to the server of SCPB/CPCB.	
	al Conditions	Natad
(i).	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall	Noted
	be carried out without prior approval of the Ministry of	
	Environment, Forest and Climate Change/SEIAA, as applicable. In	
	case of deviations or alterations in the project proposal from those	
	submitted to this Ministry for clearance, a fresh reference shall be	
	made to the Ministry/SEIAA, as applicable, to assess the adequacy of	
	conditions imposed and to add additional environmental protection	
(11)	measures required, if any.	
(ii).	The energy source for lighting purpose shall be preferably LED	Will be complied
	based, or advanced having preference in energy conservation and environment betterment.	
(iii).	The overall noise levels in and around the plant area shall be kept	Will be complied
\···/·	well within the standards by providing noise control measures	se complied
	including acoustic hoods, silencers, enclosures etc. on all sources of	

	noise generation. The ambient noise levels shall conform to the	
	standards prescribed under the Environment (Protection) Act, 1986	
/: >	Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	
(iv).	The company shall undertake all relevant measures for improving	Will be complied
	the socio-economic conditions of the surrounding area. CER	
	activities shall be undertaken by involving local villages and	
	administration and shall be implemented. The company shall	
	undertake eco-developmental measures including community	
	welfare measures in the project area for the overall improvement of	
()	the environment.	VACUL In a construction of
(v).	The company shall earmark sufficient funds towards capital cost and	Will be complied
	recurring cost per annum to implement the conditions stipulated by	
	the Ministry of Environment, Forest and Climate Change as well as	
	the State Government along with the implementation schedule for	
	all the conditions stipulated herein. The funds so earmarked for	
	environment management/pollution control measures shall not be	
, ,,	diverted for any other purpose.	
(vi).	A copy of the clearance letter shall be sent by the project proponent	Complied
	to concerned Panchayat, Zilla Parishad/Municipal Corporation,	
	Urban local Body and the local NGO, if any, from whom suggestions/	
	representations, if any, were received while processing the	
,	proposal.	
(vii).	The project proponent shall also submit six monthly reports on the	This is being complied for
	status of compliance of the stipulated Environmental Clearance	existing refinery and will
	conditions including results of monitored data (both in hard copies	continue to do so in future
	as well as by email) to the respective Regional Office of MoEF&CC,	
	the respective Zonal Office of CPCB and SPCB. A copy of	
	Environmental Clearance and six monthly compliance status report	
	shall be posted on the website of the company.	
(viii).	The environmental statement for each financial year ending 31st	This is being complied for
	March in Form-V as is mandated shall be submitted to the	existing refinery and will
	concerned State Pollution Control Board as prescribed under the	continue to do so in future
	Environment (Protection) Rules, 1986, as amended subsequently,	
	shall also be put on the website of the company along with the	
	status of compliance of environmental clearance conditions and	
	shall also be sent to the respective Regional Offices of MoEF&CC by	
	e-mail.	
(ix).	The project proponent shall inform the public that the project has	Complied and informed
	been accorded environmental clearance by the Ministry and copies	
	of the clearance letter are available with the SPCB/Committee and	
	may also be seen at Website of the Ministry and at	
	https://parivesh.nic.in/. This shall be advertised within seven days	
	from the date of issue of the clearance letter, at least in two local	
	newspapers that are widely circulated in the region of which one	
	shall be in the vernacular language of the locality concerned and a	
	copy of the same shall be forwarded to the concerned Regional	
()	Office of the Ministry.	well to the terminal of the te
(x).	The project authorities shall inform the Regional Office as well as the	Will be complied
	Ministry, the date of financial closure and final approval of the	
	project by the concerned authorities and the date of start of the	
,	project.	
(xi).	This Environmental clearance is granted subject to final outcome of	Noted
	Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT	
	and any other Court of Law, if any, as may be applicable to this	
	project.	



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

ULR No .:

TC 636621000002575, 2604, 2668, 2720, 2768, 2831, 2848, 2889

Test Report Date:

03/01/2022

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

Ambient Air Quality Monitoring

Roof of Administration Building Annexe

To Check the Pollution Load

IS 5182 (Part 14)

Mr. Rishi Pal

24 Hrs.

Date of						Param	eter					
Sampling	Particula te Matter (PM2.5) µg/m3	Particula te Matter (PM10) µg/m3	Sulphur Dioxide (as SO2) µg/m3	Nitroge n Dioxide (as NO2) ug/m3	Ozone (as O3) ug/m3	Lead (as Pb ¹) µg/ m3	Carbon Monoxid e (as CO) mg/m3	Ammon ia (as NH3) ug/m3	Nickel (as Ni²) ng/m³	Arsenic (as As ³) ng/m3	Benzo (a) pyrene (as BAP ⁴) ng/m ³	Benzen e (C6H6 ⁵) ug/m3
03/12/2021	36.4	80.1	12.9	25.8	20.5	BDL	1.04	40.8	BDL	BDL	BDL	BDL
07/12/2021	46.2	88.9	21.4	30.2	26.2	BDL	1.02	46.1	BDL	BDL	BDL	BDL
10/12/2021	36.1	86.3	20.1	24.8	23.3	BDL	0.95	41.4	BDL	BDL	BDL	BDL
14/12/2021	44.8	89.2	22.4	26.2	21.8	BDL	0.96	44.2	BDL	BDL	BDL	BDL
17/12/2021	47.3	90.8	21.8	30.9	18.4	BDL	1.05	42.1	BDL	BDL	BDL	BDL
21/12/2021	38.2	85.7	23.5	34.7	26.4	BDL	1.0	48.4	BDL	BDL	BDL	BDL
23/12/2021	40.8	81.2	19.5	27.2	21.7	BDL	1.1	52.7	BDL	BDL	BDL	BDL
27/12/2021	41.4	90.8	24.4	33.3	24.9	BDL	1.2	49.8	BDL	BDL	BDL	BDL
Minimum	36.1	80.1	12.9	24.8	18.4	-	0.95	40.8	æ:_	(# <u>.</u>)	(4)	
Maximum	47.3	90.8	24.4	34.7	26.4	-	1.2	52.7	127	323	1040	983
Average	41.4	86.6	20.7	29.1	22.9		1.04	45.6	i i i i i		•	
NAAQM Standards	60	100	80	80	100	1	2	400	20	6	1	5
Test Method	40CFR Appendix L Part 53 CPCB Guideline s	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:518 2 (P-9)	NL/SO P/AAQ- 11	IS:5182 (P-10)	Method of Air Samplin g & Analysis	NL/SO P/AAQ -13	NL/SOP /AAQ- 12	IS:5182 (P-12)	IS:5182 (P-11)

*NAAQS: National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Part-II-sec.-3(i)] 16.11.
BDL-Below Detection Limit, ³Arsenic-BDL [LOQ- 0.5], ⁴BAP-BDL [LOQ- 0.5], ⁵Benzene-BDL [LOQ- 0.5]
Sample Analysed within Seven days from the date of sampling.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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CORPORATE OFFICE & CENTRAL LABORATORIES :-

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Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

ULR No .:

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

TC636622000000009, 030, 059, 099,127, 188, 292, 326

Test Report Date:

05/02/2022

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

Ambient Air Quality Monitoring

Roof of Administration Building Annexe

To Check the Pollution Load

IS 5182 (Part 14)

Mr. Rishi Pal

24 Hrs.

Date of						Parame	eter				D	Benzen
Sampling -	Particula te Matter (PM2.5) µg/m3	Particula te Matter (PM10) µg/m3	Sulphur Dioxide (as SO2) µg/m3	Nitroge n Dioxide (as NO2) ug/m3	Ozone (as O3) ug/m3	Lead (as Pb¹) µg/ m3	Carbon Monoxid e (as CO) mg/m3	ia (as	Nickel (as Ni ²) ng/m ³	Arsenic (as As³) ng/m3	Benzo (a) pyrene (as BAP ⁴) ng/m ³	e (C6H6 ⁵) ug/m3
02/01/2022	34.68	82.42	14.24	22.82	25.64	BDL	1.07	45.26	BDL	BDL	BDL	BDL
03/01/2022		86.48	18.62	32.84	28.42	BDL	1.03	42.84	BDL	BDL	BDL	BDL
07/01/2022	42.82	1-9/01/21/02	Made Service (30.42	22.84	BDL	0.94	48.24	BDL	BDL	BDL	BDL
10/01/2022	32.64	80.68	22.42		26.86	BDL	0.91	40.81	BDL	BDL	BDL	BDL
14/01/2022	40.24	84.22	20.24	34.92	Interestor III	BDL	1.12	44.86	BDL	BDL	BDL	BDL
17/01/2022	44.88	92.64	24.62	38.16	20.48		1.06	46.58	BDL	BDL	BDL	BDL
21/01/2022	36.52	82.11	26.22	36.44	23.62	BDL	37.0000	(49,622)	BDL	BDL	BDL	BDL
24/01/2022	38.44	80.16	21.48	28.82	21.52	BDL	1.12	50.14	BDL	BDL	BDL	BDL
28/01/2022	43.62	88.68	23.88	31.24	24.82	BDL	1.21	47.22	- BUL	- BDL	-	
Minimum	32.64	80.16	14.24	22.82	20.48		0.91	40.81	-		-	-
Maximum	44.88	92.64	26.22	38.16	28.42	-	1.21	50.14	-	-		-
Average	39.23	84.67	21.47	31.96	24.28		1.06	45.74				5
NAAQM Standards	60	100	80	80	100	1 NL/SO	2 IS:5182	400 Method	20 NL/50		1 IS:5182	IS:518
Test Method	40CFR Appendix L Part 53 CPCB Guideline	880 580	IS:5182 (P-2)	IS:5182 (P-6)	IS:518 2 (P-9)	P/AAQ-	70 100 70 100 100 100 100 100 100 100 10	of Air Samplin g & Analysis	P/AAQ -13		(P-12)	(P-11)

*NAAQS: National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Part 15 BDL-Below Detection Limit, *Arsenic-BDL [LOQ- 0.5], *BAP-BDL [LOQ- 0.5], *Bapple Analysed within Seven days from the date of sampling.

Lead-BDL [LOQ- 0.5], Nickel-BDL [LOQ- 1.0]

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

NOTE: The laboratory accepts the responsibility for content of report. The results contained in this test report results only a few points of the point of the po

CORPORATE OFFICE & CENTRAL LABORATORIES :-

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

ULR No .:

TC636622000000388, 405, 417, 433, 515, 546, 581, 634

Test Report Date: 05/03/2022

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

Ambient Air Quality Monitoring

Roof of Administration Building Annexe

To Check the Pollution Load

IS 5182 (Part 14)

Mr. Rishi Pal

Date of	Interest of the Party of the Pa	SHI 19		1		Param	neter					
Sampling	Particula te Matter (PM2.5) µg/m3	Particula te Matter (PM10) µg/m3	Sulphur Dioxide (as SO2) µg/m3	Nitroge n Dioxide (as NO2) ug/m3	Ozone (as O3) ug/m3	Lead (as Pb¹) µg/ m3	Carbon Monoxid e (as CO) mg/m3	Ammon ia (as NH3) ug/m3	Nickel (as Ni ²) ng/m ³	Arsenic (as As ³) ng/m3	Benzo (a) pyrene (as BAP ⁴) ng/m ³	Benzen e (C6H6 ⁵) ug/m3
01/02/2022	36.64	86.41	16.22	28.91	20.82	BDL	1.05	42.72	BDL	BDL	BDL	BDL
04/02/2022	40.85	90.82	20.46	33.62	22.69	BDL	1.15	44.28	BDL	BDL	BDL	BDL
08/02/2022	34.24	82.26	17.22	27.33	24.62	BDL	1.06	43.95	BDL	BDL	BDL	BDL
11/02/2022	42.85	88.45	22.69	31.24	21.95	BDL	0.95	41.52	BDL	BDL	BDL	BDL
15/02/2022	38.95	84.22	26.52	34.68	23.77	BDL	1.04	38.46	BDL	BDL	BDL	BDL
18/02/2022	40.66	80.94	24.52	30.94	25.22	BDL	1.02	40.22	BDL	BDL	BDL	BDL
21/02/2022	34.99	78.42	20.66	25.26	20.78	BDL	1.16	46.46	BDL	BDL	BDL	BDL
25/02/2022	41.84	83.46	25.68	32.84	24.61	BDL	1.14	44.11	BDL	BDL	BDL	BDL
Minimum	34.24	78.42	16.22	25.26	20.78		0.95	38.46	-	2	-	-
Maximum	42.85	90.82	26.52	34.68	25.22	2 .5 2	1.16	46.46) - 2	*		-
Average	38.88	84.37	21.75	30.60	23.06	(A)	1.07	42.72	-		(37)	
NAAQM Standards	60	100	80	80	100	1	2	400	20	6	1	5
Test Method	40CFR Appendix L Part 53 CPCB Guideline S	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:518 2 (P-9)	NL/SO P/AAQ- 11	IS:5182 (P-10)	Method of Air Samplin g & Analysis	NL/SO P/AAQ -13	NL/SOP /AAQ- 12	IS:5182 (P-12)	IS:518 (P-11)

*NAAQS: National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Page BDL-Below Detection Limit, 3Arsenic-BDL [LOQ- 0.5], BAP-BDL [LOQ- 0.5], Sample Analysed within Seven days from the date of sampling.

3(1)] 16.11.2009 0.5], 'Lead-BDL [LOQ- 0.5], 'Nickel-BDL [LOQ-

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202203030113, 202203070114, 202203110118, 202203140114

202203180110, 202203210114, 202203250126, 202203280110

Test Report Date: 04/04/2022

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Ambient Air Quality Monitoring

Roof of Administration Building Annexe

To Check the Pollution Load

IS 5182 (Part 14)

Mr. Rishi Pal

Date of						Paran	neter					
Sampling	Particula te Matter (PM2.5) µg/m3	Particula te Matter (PM10) µg/m3	Sulphur Dioxide (as SO2) µg/m3	Nitroge n Dioxide (as NO2) ug/m3	Ozone (as O3) ug/m3	Lead (as Pb¹) µg/ m3	Carbon Monoxid e (as CO) mg/m3	Ammon ia (as NH3) ug/m3	Nickel (as Ni ²) ng/m ³	Arsenic (as As³) ng/m3	Benzo (a) pyrene (as BAP ⁴) ng/m ³	Benzen e (C6H6 ⁵) ug/m3
03/03/2022	34.16	90.14	20.14	26.24	20.28	ND	1.14	36.82	ND	ND	ND	ND
07/03/2022	38.14	94.16	22.64	30.28	18.67	ND	1.12	40.16	ND	ND	ND	ND
11/03/2022	32.16	86.24	18.22	25.42	22.66	ND	1.08	38.22	ND	ND	ND	ND
14/03/2022	40.24	92.64	24.42	32.82	23.18	ND	0.98	42.28	ND	ND	ND	ND
18/03/2022	36.16	88.22	21.68	28.42	20.72	ND	1.01	34.66	ND	ND	ND	ND
21/03/2022	30.82	84.64	26.52	34.68	21.28	ND	1.05	46.12	ND	ND	ND	ND
25/03/2022	32.44	80.14	19.58	26.82	23.82	ND	1.12	44.82	ND	ND	ND	ND
28/03/2022	38.64	91.24	23.16	28.88	22.42	ND	1.13	42.72	ND	ND	ND	ND
Minimum	30.82	80.14	18.22	25.42	20.28		0.98	34.66	•			
Maximum	40.24	94.16	26.52	34.68	23.82		1.14	46.12	(#7)	188		
Average	35.35	88.43	22.05	29.20	21.63	-	1.08	40.73	3 - 3	9#31	40	*
NAAQM Standards	60	100	80	80	100	1	2	400	20	6	1	5
Test Method	40CFR Appendix L Part 53 CPCB Guideline s	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:518 2 (P-9)	NL/SO P/AAQ- 11	IS:5182 (P-10)	Method of Air Samplin g & Analysis	NL/SO P/AAQ -13	NL/SOP /AAQ- 12	IS:5182 (P-12)	IS:5182 (P-11)

*NAAQS: National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(I)] 16.11.2009

ND-Not Detected, ³Arsenic-ND [DL- 0.5], ⁴BAP-ND [DL- 0.5], ⁵Benzene-ND [DL- 0.5], ⁴Lead-ND [DL- 0.5], ⁵Nickel-ND [DL- 1.0] Sample Analysed within Seven days from the date of sampling.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202204010110, 202204040111, 202204008110, 202204110114

202204150114, 202204180113, 202204020114, 202204220122

202204290114

Test Report Date:

07/05/2022

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By Sampling Duration (Hrs.)

Ambient Air Quality Monitoring

Roof of Administration Building Annexe

To Check the Pollution Load

IS 5182 (Part 14) Mr. Rishi Pal

24 Hrs.

Date of						Paran	ieter					
Sampling	Particula te Matter (PM2.5) µg/m3	Particula te Matter (PM10) µg/m3	Sulphur Dioxide (as SO2) µg/m3	Nitroge n Dioxide (as NO2) ug/m3	Ozone (as O3) ug/m3	Lead (as Pb ¹) µg/ m3	Carbon Monoxid e (as CO) mg/m3	Ammon ia (as NH3) ug/m3	Nickel (as Ni ²) ng/m ³	Arsenic (as As ³) ng/m3	Benzo (a) pyrene (as BAP ⁴) ng/m ³	Benzen e (C6H6 ⁵) ug/m3
01/04/2022	38.26	92.41	18.26	24.62	22.68	ND	1.13	34.28	ND	ND	ND	ND
04/04/2022	34.51	88.42	23.28	35.41	20.47	ND	1.15	38.42	ND	ND	ND	ND
08/04/2022	36.12	80.14	20.44	26.14	23.82	ND	1.06	36.42	ND	ND	ND	ND
11/04/2022	42.42	90.84	26.24	32.42	18.26	ND	0.94	44.82	ND	ND	ND	ND
15/04/2022	38.44	84.48	22.58	34.28	21.22	ND	1.04	38.22	ND	ND	ND	ND
18/04/2022	36.24	88.22	20.22	30.55	24.86	ND	1.06	46.24	ND	ND	ND	ND
22/04/2022	40.82	92.14	23.46	32.24	21.88	ND	1.08	40.48	ND	ND	ND	ND
25/04/2022	37.18	90.44	17.88	26.48	23.22	ND	1.12	46.55	ND	ND	ND	ND
Minimum	34.51	80.14	17.88	24.62	18.26	-	0.94	34.28	-	120	-	-
Maximum	42.42	92.41	26.24	35.41	24.86	*	1.15	46.55	- 32	-	-	-
Average	38.00	88.39	21.55	30.27	22.05	-	1.07	40.68	-:	-	•	-
NAAQM Standards	60	100	80	80	100	1	2	400	20	6	1	5
Test Method	40CFR Appendix L Part 53 CPCB Guideline s	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:518 2 (P-9)	NL/SO P/AAQ- 11	IS:5182 (P-10)	Method of Air Samplin g & Analysis	NL/SO P/AAQ -13	NL/SOP /AAQ- 12	IS:5182 (P-12)	IS:518: (P-11)

*NAAQS: National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009 ND-Not Detected, ³Arsenic-ND [DL- 0.5], ⁴BAP-ND [DL- 0.5], ⁵Benzene-ND [DL- 0.5], ⁴Lead-ND [DL- 0.5], ⁵Nickel-ND [DL- 1.0] Sample Analysed within Seven days from the date of sampling.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202205010120, 202206010117, 202205090125, 202205130120

202205160114, 202205200121, 202205230117, 202205270114

202205300114

Test Report Date:

07/06/2022

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

Ambient Air Quality Monitoring

Roof of Administration Building Annexe

To Check the Pollution Load

IS 5182 (Part 14)

Mr. Rishi Pal

24 Hrs.

Date of						Param	eter					
Sampling -	Particula te Matter (PM2.5) µg/m3	Particula te Matter (PM10) µg/m3	Sulphur Dioxide (as SO2) µg/m3	Nitroge n Dioxide (as NO2) ug/m3	Ozone (as O3) ug/m3	Lead (as Pb ¹) µg/ m3	Carbon Monoxid e (as CO) mg/m3	Ammon ia (as NH3) ug/m3	Nickel (as Ni ²) ng/m ³	Arsenic (as As ³) ng/m3	Benzo (a) pyrene (as BAP ⁴) ng/m ³	Benzen e (C6H6 ⁵) ug/m3
02/05/2022	34.26	96.46	22.40	28.26	20.26	ND	1.08	36.24	ND	ND	ND	ND
06/05/2022	36.24	90.82	20.28	30.84	24.20	ND	1.12	34.10	ND	ND	ND	ND
09/05/2022	32.82	86.44	24.62	32.40	22.88	ND	1.08	32.68	ND	ND	ND	ND
13/05/2022	40.46	94.26	22.10	36.24	19.82	ND	1.02	40.48	ND	ND	ND	ND
16/05/2022	34.26	82.42	20.84	30.66	20.64	ND	0.94	36.24	ND	ND	ND	ND
20/05/2022	30.84	84.60	18.94	32.42	22.18	ND	1.12	33.80	ND	ND	ND	ND
	38.24	96.48	22.46	34.16	21.86	ND	1.04	37.82	ND	ND	ND	ND
23/05/2022	34.16	98.42	20.88	32.24	26.44	ND	1.06	42.84	ND	ND	ND	ND.
27/05/2022	35.48	94.38	21.29	30.53	24.36	ND	1.04	40.16	ND	ND	ND	ND
30/05/2022		82.42	18.94	28.26	19.82		0.94	32.68	-	(se)	-	-
Minimum	30.84 40.46	98.42	24.62	36.24	26.44	-	1.12	42.84	•	-	20	-
Maximum	35.20	91.59	21.53	31.97	22.52		1.06	37.15			-	2
Average		100	80	80	100	1	2	400	20	6	1	5
Standards Test Method	40CFR Appendix L Part 53 CPCB Guideline	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:518 2 (P-9)	NL/SO P/AAQ- 11	IS:5182 (P-10)	Method of Air Samplin g & Analysis	NL/SO P/AAQ -13		IS:5182 (P-12)	IS:518 (P-11)

*NAAQS: National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009

ND-Not Detected, 'Arsenic-ND [DL- 0.5], 'BAP-ND [DL- 0.5], 'Benzene-ND [DL- 0.5], 'Lead-ND [DL- 0.5], 'Nickel-ND [DL- 1.0]

Sample Analysed within Seven days from the date of sampling.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

M/s Indian Oil Corporation Limited **Issued To**

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202206030110, 202206060110, 202206100110, 202206130110 202206170110, 202206200110, 202206240110, 202206170115

06/07/2022

Test Report Date:

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring Method of Sampling

Monitoring Conducted By

Ambient Air Quality Monitoring

Roof of Administration Building Annexe

To Check the Pollution Load

IS 5182 (Part 14)

Mr. Rishi Pal

Date of						Paran	neter					
Sampling	Particula te Matter (PM2.5) µg/m3	Particula te Matter (PM10) µg/m3	Sulphur Dioxide (as SO2) µg/m3	Nitroge n Dioxide (as NO2) ug/m3	Ozone (as O3) ug/m3	Lead (as Pb¹) µg/ m3	Carbon Monoxid e (as CO) mg/m3	Ammon ia (as NH3) ug/m3	Nickel (as Ni ²) ng/m ³	Arsenic (as As ³) ng/m3	Benzo (a) pyrene (as BAP ⁴) ng/m ³	Benzen e (C6H6 ⁵) ug/m3
03/06/2022	36.16	92.48	20.14	28.48	22.52	ND	1.06	34.88	ND	ND	ND	ND
06/06/2022	30.46	86.28	18.60	25.42	21.94	ND	1.13	36.40	ND	ND	ND	ND
10/06/2022	34.82	82.26	22.54	30.64	24.60	ND	1.06	32.50	ND	ND	ND	ND
13/06/2022	44.60	96.58	24.16	32.40	21.88	ND	1.04	48.62	ND	ND	ND	ND
17/06/2022	36.40	84.28	21.24	28.90	22.60	ND	0.98	32.33	ND	ND	ND	ND
20/06/2022	33.48	80.16	19.98	30.12	20.24	ND	1.10	34.28	ND	ND	ND	ND
24/06/2022	34.84	90.36	23,40	36.20	23.64	ND	1.06	33.92	ND	ND	ND	ND
27/06/2022	40.26	96.84	22.82	34.24	21.92	ND	1.05	36.18	ND	ND	ND	ND
Minimum						-			(表	W25		-
Maximum						9			-		*	
Average						-			1	1/2	2	
NAAQM Standards	60	100	80	80	100	1	2	400	20	6	1	5
Test Method	40CFR Appendix L Part 53 CPCB Guideline	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:518 2 (P-9)	NL/SO P/AAQ- 11	IS:5182 (P-10)	Method of Air Samplin g & Analysis	P/AAQ -13	NL/SOP /AAQ- 12	IS:5182 (P-12)	IS:5182 (P-11)

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(RAVINDER MITTAL)

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<sup>::
&</sup>quot;MAAQS: National Ambient Air Quality Standards; Scherlule-VII, [Rule 3 (38)], [Part-II-sec.-3(i)] 16.11.2009
ND-Not Detected, ³Arsenic-ND [DL- 0.5], ⁴BAP-ND [DL- 0.5], ⁴Benzenie-ND [DL- 0.5], ⁴Lead-ND [DL- 0.5], ³Nickel-ND [DL- 1.0] Sample Analysed within Seven days from the date of sampling.



BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

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Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No.:

1C 636621000002743-2744

(Refinery Division)

Test Report Date:

23/12/2021

Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of the Sample

: Stack Monitoring

Purpose of Monitoring

: To Check the Pollution Load

Method of Sampling

: IS: 11255 (Part 7)

Monitoring Conducted By

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambie nt Temp.	Stack Temp . (°C)	Aveg. Gas Velocity		jen Sulphi as H₂S)	de
			(meter)	(meter)	(°C)	. (-/	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	16/12/2021	70	1.9	21	115	9.04	BDL	-	(#)
2	SRU-26	16/12/2021	70	1.9	21	117	9.53	BDL		*
		ne Al Viene V		10° DO 2008			Old		15	
*		Permissible I	_imits (mg/	Nm³)			New	20	10	
				IS:1	1255 (P-4)				

Remark:

BDL-Below Detection Limit, ¹ Hydrogen Sulphide (as H,S)-BDL [LÖQ- 0.1], Sample Analysed within six days from the date of sampling.



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

Test Report No.:

202112160110-111

(Refinery Division)

Test Report Date:

23/12/2021

Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of the Sample

Purpose of Monitoring Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of - Sampling	Stack Height (meter)	Stack Diameter (meter)	Amb ient Tem	Stack Temp . (°C)	Average Gas Velocity		s of Su as SO _x)			s of Nitro (as NO _x)	gen
			(meter)	(meter)	p. (°C)	.(0)	(m/s)	mg/N m³	Kg/ hr	PPM	mg/N m³	Kg/hr	PPM
1	SRU-57	16/12/2021	70	1.9	21	115	9.04	25	1.8	9.5	41	2.91	21.79
2	SRU-26	16/12/2021	70	1.9	21	117	9.53	29	2.2	11.1	49	3.64	26.04
					Old					350			
		Permissible L		New					250				

BDL-Below Detection Limit, Oxides of Sulphur (as 50x)-BDL (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

Test Report No.:

202112160110-111

(Refinery Division)

Test Report Date:

23/12/2021

Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars Nature of the Sample

Stack Monitoring

To Check the Pollution Load

Purpose of Monitoring Method of Sampling

IS: 11255 (Part 7)

Monitoring Conducted By

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter	Stack Diamet er	Ambi ent Temp	Stack Temp . (°C)	Average Gas Velocity	Car	bon Monox (as CO)	ide
)	(meter)	. (°C)	- (- /	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	16/12/2021	70	1.9	21	115	9.04	112	7.94	97.77
2	SRU-26	-16/12/2021	70	1.9	21	117	9.53	107	7.96	93.40
				-31			Old		150	
	P	ermissible Lim	its (mg/N	m°)			New		100	

BDL-Below Detection Limit, Carbon Monoxide (as CO) BDL (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC636622000000366-367

(Refinery Division)

Test Report Date:

Panipat Refinery, Distt. Panipat

Haryana, INDIA

05/02/2022

Sample Particulars

Nature of the Sample

Stack Monitoring

Purpose of Monitoring

To Check the Pollution Load

Method of Sampling

IS: 11255 (Part 7)

Monitoring Conducted By

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambie nt Temp.	Stack Temp . (°C)	Aveg. Gas Velocity		en Sulphi as H₂S)	de
1,138	READ, MAIL	May six	(meter)	(ineter)	(°C)	. (0)	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	31/01/2022	70	1,9	22	119	9.50	BDL	18.	(4)
2	SRU-26	31/01/2022	70	1.9	22	127	9.68	BDL	*	150
		E LANGE		. 1			Old		15	
		Permissible l	Limits (mg/	Nm²)			New		10	
	J.p. <		Test Meti			IS:1	1255 (P-4)		

BDL-Below Detection Limit, 1 Hydrogen Sulphide (as H;S)-BDL [LOQ- 0.1], Sample Analysed within six days from the date of sampling.



AUTHORISED SIGNATORY) (RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No .:

202201310110-111

Test Report Date:

05/02/2022

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diameter	Amb ient Tem	Stack Temp . (°C)	Average Gas Velocity		s of Su as SO _x)			s of Nitro (as NO _x)	gen
		2.5	(meter)	(meter)	p. (°C)	.(0)	(m/s)	mg/N m³	Kg/ hr	PPM	mg/N m³	Kg/hr	PPM
+	SRU-57	31/01/2022	70	1.9	22	119	9.50	29	2.2	11.1	46	3.43	24.45
2	SRU-26	31/01/2022	70	1.9	22	127	9.68	32	2.4	12.2	54	4.08	28.70
-	Sito Eu		Old		1 <u>4</u>			350					
		Permissible L	imits (mg/	Nm³)		New			3 == 1		250		

Remark:

BDL Below Detection Limit, Oxides of Sulphur (as SO₂)-BDL (LOO-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202201310110-111

Test Report Date:

05/02/2022

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diamet	Ambi ent	Stack Temp . (°C)	Average Gas Velocity	Carl	(as CO)	ide
			(meter	er (meter)	Temp	.(0)	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	31/01/2022	70	1.9	22	119	9.50	119	8.87	103.88
2	SRU-26	31/01/2022	70	1.9	22	127	9.68	121	9.13	105.62
				Old		150				
	p	ermissible Lim	its (mg/N		New		100			

BDL-Below Detection Limit, Carbon Monoxide (as CO) BDL (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyses

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

Test Report

ULR No.: TC 63662200000001-0005, 0011-0014, 0019-0020, 0022, 0105-010

0121-0124

Test Report Date: 26/01/2022

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diamet er (meter	Ambie nt Temp. (°C)	Stack Temp. (°C)	e Gas Velocit y (m/s)	Partic Matters ¹	culate (as PM)	Nicke (a	l & Vanad Is Ni & V)	ium²
1	HRSG-2	1/1/2022)) (III/S)	mg/N m³	Kg/hr	mg/N m³	Kg/h	PPM
2	HRSG-3		65	3.3	19	219	10.43	11.68	2.3		r	
3	HRSG-4	1/1/2022	70	3.3	19	217	10.97	14.78	3.0	BDL		
4	Colorate Carlo	1/1/2022	70	3.3	18	218	10.63	19.54	100/10	BDL		125
	CPP-VHP-1	1/1/2022	100	3.34	16	122		The state of	3.9	BDL	(4)	-
5	CPP-VHP-2	1/1/2022	100	3.34	1,000	1907255	10.26	12.67	3.1	BDL	*	
6	OHCU LP Section	3/1/2022	65		16	140	10.15	14.28	3.3	BDL		-
7	OHCU RG Heater	3/1/2022	108/6	2.42	21	192	9.93	12.67	1.3	BDL	-	
8	PX Isomer		63	1.35	21	241	11.15	9.68	0.3			*
9	PX Tatory	3/1/2022	56	1.2	21	243	11.23	12.29		BDL		*
10	PX-Xylene	3/1/2022	56	1.2	21	237	10.46	14.98	0.3	BDL	9	
11	PXCCR	4/1/2022	78	2	19	194	10.54	15.38	535500	BDL	-	
12	PX NHT	4/1/2022	100	1.9	21	264	11.02	18.28	1.2	BDL	-	-
13	AVU-1	5/1/2022	30	1	20	239	11.02	120000000	1.1	BDL	-	123
14	DECEMBER OF THE PROPERTY OF TH	14/01/2022	100	5.1	16	120	9.77	13.26	0.2	BDL	*	
	HGU 06	14/01/2022	60	3.4	17	156	9.77	14.24	7.8	BDL	542	14
15	UB-01	15/01/2022	100	3,04			9.15	11.26	2.3	BDL	14	-
16	MSQ-1	15/01/2022	19-27-8-25		19	165	10.38	14.18	2.6	BDL		
17	MCO 2		60	1.64	15	195	10.11	8.34	0.4	BDL		
	MSQ-2	15/01/2022	60	1.64	15	272	11.81	enomus.	-50.5			•
.8	MSQ-3	15/01/2022	60	1.64		Strain	343,004.49	9.29	0.5	BDL	-	-
		ONE NOT STORE	00	1.04	15	283	12.14	8.94	0.4	BDL	*	4
	Pern	nissible Limits ((mg/Nm ³)				Gas	10				_
		(<u>p.s</u> v.)250	5045 7 D				Liquid	100			5	
arkı	Below Detection Limit, ¹ Particulate Ma Imple Analysed within six days from th		lethod					IS-11255	(P-1)	USEPA M		Ву

BDL-Below Detection Limit, ¹ Particulate Matters (as PM)-BDL [LOQ- 5.0], ¹ Nickel & Vanadium (as Ni & V)*-BDL [LOQ- 0.5] Sample Analysed within six days from the date of sampling.



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division)

Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

: Stack Monitoring

: To Check the Pollution Load

ULR No.: TC 636622000000131-0143

Test Report Date: 26/01/2022

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diamete r	Ambien t Temp. (°C)	Stack Temp. (°C)	Averag & Gas Velocit	Partic Matter PN	s¹ (as		al & Vanad (as Ni & V)	
				(meter)			y (m/s)	mg/N m ³	Kg/h	mg/N m³	Kg/hr	PPM
19	DCU Heater-1	17/01/2022	70	3	16	151	10.55	7.39	1.4	BDL		*
20	PTA/Hot Oil Heater	17/01/2022	60	2.35	15	70	8.13	14.27	1.6	BDL	-	•
21	PTA/Thermal Oxidiser	17/01/2022	60	2.35	16	148	10.41	14.28	1.6	BDL		
22	PTA/FCPH	17/01/2022	60	2.35	16	153	10.78	11.26	1.3	BDL	-	
23	DHDT BSIV	17/01/2022	70	1.8	16	123	9.71	9.49	0.6	BDL		
24	HGU-BS-VI	17/01/2022	0	3.4	15	146	10.33	7.37	1.8	BDL	-	-
25	DHDS	17/01/2022	60	1.25	16	172	10,32	8.21	0.3	BDL		
26	CCRU Reformer Heater-205 FF	18/01/2022	60	1.26	16	274	11.13	7.32	0.2	BDL	•	
27	CCRU NHT Heater	18/01/2022	70	2.34	18	257	11.08	8.25	0.8	BDL	-	-
28	CCRU Reformer Heater-201, 202,203 FF	18/01/2022	60	1.64	17	275	11.33 +	9.35	0.4	BDL	s	
29	DHDT H-01	18/01/2022	70	1.8	18	221	11.56	9.24	0.6	BDL	-	-
30	DHDT H-02	18/01/2022	70	1.8	18	232	12.10	8.24	0.5	BDL		
31	RFCC Heater	18/01/2022	59	0.9	18	235	11.46	9.24	0.1	BDL		
		Dormiesib'- 1		35		Gas	10			•		
		Permissible L	imits (mg/N	im-)		. ·cuid	100)		5		
		7.5	Test Method	d			- 1	IS-1125	(P-1)	USEPA M	ethod 29	By AAS

EDL-Below Detection Limit, * Particulate Matters (as PM)-BDL [LOQ- 5.0], * Nickel & Yanadium (as Ni & V)*-BDL [LOQ- 0.5] Sample Analysed within six days from the date of sampling.



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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division)

Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.:202201010110-114, 202201030110-113, 202201040110-111 202201050110, 202201140110-111, 202201150110-113

Date: 26/01/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diamete r	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity		es of Sulph (as SO _x)	nur	Oxio	(as NO _x)	
			********	(meter)		8 8	(m/s)	mg/Nm³	Kg/hr	PPM	mg/N m³	Kg/hr	PPM
1	HRSG-2	1/1/2022	65	3.3	19	219	10.43	23	4.5	8.8	277	53.91	147.23
2	HRSG-3	1/1/2022	70	3.3	19	217	10.97	17	3.5	6.5	228	46.87	121.19
3	HRSG-4	1/1/2022	70	3.3	18	218	10 53	11	2.2	4.2	152	30.21	80.79
4	CPP-VHP-1	1/1/2022	100	3.34	16	122	10.26	17	4.2	6.5	318	77.65	169.02
5	CPP-VHP-2	1/1/2022	100	3.34	16	140	10.15	188	43.5	71.7	324	74.89	172.21
6	OHCU LP Section	3/1/2022	65	2.42	21	102	9.93	7	0.7	2.7	53	5.59	28.17
7	OHCU RG Heater	3/1/2022	63	1.35	21	241	11.15	3	0.1	1.1	68	2.27	36.14
8	PX Isomer	3/1/2022	56	1.2	21	243	11.23	3	0.1	1.1	37	0.98	19.67
9	PX Tatory	3/1/2022	56	1.2	21	237	10.46	9	0.2	3.4	99	2.47	52.62
10	PX-Xylene	4/1/2022	78	2	19	194	10.54	8	0.6	3.1	90	6.85	47.84
11	PXCCR	4/1/2022	100	1.9	21	264	11.02	6	0.4	2.3	90	5.62	47.84
12	PX NHT	5/1/2022	30	1	20	239	11.01	6	0.1	2.3	123	2.23	65.38
13	AVU-1	14/01/2022	100	5.1	16	120	9.77	7	3.8	2.7	83	45.26	44.12
14	HGU 06	14/01/2022	60	3.4	17	156	9.15	5	1.0	1.9	41	8.52	21.79
15	UB-01	15/01/2022	100	3.04	19	165	10.38	191	35.2	72.9	390	71.96	207.29
16	MSQ-1	15/01/2022	60	1.64	16	195	16.1	6	0.3	2.3	101	4.95	53.68
17	MSQ-2	15/01/2022	60	1.64	15	272	11.81	3	0.1	1.1	88	4.32	46.77
18	MSQ-3	15/01/2022	60	1.64	15	283	12.14	3	0.1	1.1	82	4.06	43.58
	1						Gas		50			350	
		Permissible Li	mits (mg/N	lm²)			Liquid		1700			450	

BDL-Below Detection Limit, Oxides of Sulphur (as SO₂)-BDL (LOQ-1.0)

Sample Analysed within six days from the date of sampling, All above Parameters are measures with Flue Gas Analyser.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Sample Particulars Nature of the Sample

Purpose of Monitoring

Monitoring Conducted By

Method of Sampling

NITYA LABORATORIES

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- C+91-191-2465597

Test Report No . 202201170110-116, 202201180110-115

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

: Stack Monitoring

: To Check the Pollution Load

Date: 26/01/2022

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambie nt Temp.	Stack Temp. (°C)	Average Gas Velocity	Y. 3604.055	es of Sulpi (as SO _x)	hur	111111111111111111111111111111111111111	s of Nitro (as NO _x)	gen
					(°C)		(m/s)	mg/Nm³	Kg/hr	PPM	mg/Nm ³	Kg/hr	PPM
19	DCU Heater-1	17/01/2022	70	3	16	151	10.55	17	3.2	6.5	46	8.68	21.15
20	PTA/Hot Oil Heater	17/01/2022	60	2.35	15	70	8.13	10	1.1	3.8	35	3.86	24.45 18.60
21	PTA/Thermal Oxidiser	17/01/2022	60	2.35	16	148	10.41	3	0.3	1.1	27	3.11	14.35
22	PTA/FCPH	17/01/2022	60	2.35	16	153	10.78	11	1.3	4.2	161	10.00	
23	DHDT BSIV	17/01/2022	70	1.8	16	123	9.71	12	0.8	1888	161	18.97	85.58
24	HGU-BS-VI	17/01/2022	0	3.4	15	146	10.33	16		4.6	76	5.09	40.40
25	DHDS	17/01/2022	60	1.25	16	172	C30200000	2000	3.8	6.1	70	16.82	37.21
26	CCRU Reformer	18/01/2022			7150	1975-1	10.32	3	0.1	1.1	49	1.50	26.04
20	Heater-205 FF	10/01/2022	60	1.26	16	274	11.13	7	0.2	2.7	31	0.84	16.48
27	CCRU NHT Heater	18/01/2022	70	2.34	18	257	11.08	8	0.8	3.1	170		
28	CCRU Reformer	18/01/2022	60	1.64	17	18/9/0/1			S242	539900	178	17.17	94.61
	Heater-201, 202,203 FF	,,		1.04	17	275	11.33	3	0.1	1.1	64	3.00	34.02
29	DHDT H-01	18/01/2022	70	1.8	18	221	11.56	3	- 0.3				
30	DHDT H-02	18/01/2022	70	1.8	18	2::	12.10	6	0.2	2.3	74	4.73	39.33
31	RFCC Heater	18/01/2022	59	0.9	18	235	11.46	3	0.0	G#992	111	7.26	59.00
								U	50	1.1	74	1.14	39.33
		ermissible Lim	its (mg/Nr	n³)		-	Gas					350	
mark:							Liquid		1700			450	

BDL-Below Detection Limit, Oxides of Sulphur (as 50;)-BDL (100-1.6)
Sample Analysed within six days from the date of sampling. All above Parameters are measures with Fluo Gas Analyser.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.:202201010110-114, 202201030110-113, 202201040110-111 202201050110, 202201140110-111, 202201150110-113

Date: 26/01/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)	Ca	arbon Monoxi (as CO)	ide
			(November 14		1,3875.0		mg/Nm³	Kg/hr	PPM
1	HRSG-2	1/1/2022	65	3.3	19	219	10.43	16	3.11	13.97
2	HRSG-3	1/1/2022	70	3.3	19	217	10.97	7	1.44	6.11
3	HRSG-4	1/1/2022	70	3.3	18	218	10.63	7	1.39	6.11
4	CPP-VHP-1	1/1/2022	100	3.34	16	122	10.26	5	1.22	4.36
5	CPP-VHP-2	1/1/2022	100	3.34	16	140	10.15	6	1.39	5.24
6	OHCU LP Section	3/1/2022	65	2.42	21	192	9.93	78	8.22	68.09
7	OHCU RG Heater	3/1/2022	63	1.35	21	241	11.15	5	0.17	4.36
8	PX Isomer	3/1/2022	56	1.2	21	243	11.23	11	0.29	9.60
9	PX Tatory	3/1/2022	56	1.2	21	237	10.46	11	0.27	9.60
10	PX-Xvlene	4/1/2022	78	2	19	194	10.54	6	0.46	5.24
11	PXCCR	4/1/2022	100	1.9	21	264	11.02	1	0.06	0.87
12	PX NHT	5/1/2022	30	1	20	239	11.01	7	0.13	6.11
13	AVU-1	14/01/2022	100	5.1	16	120	9.77	9	4.91	7.86
14	HGU 06	14/01/2022	60	3.4	17	156	9.15	53	11.02	46.26
15	UB-01	15/01/2022	100	3.04	19	165	10.38	14	2,58	12.22
16	MSQ-1	15/01/2022	60	1.64	16	195	10.11	12	0.59	10.47
17	MSQ-2	15/01/2022	60	1.64	15	272	11.81	14	0.69	12.22
18	MSQ-3	15/01/2022	60	1.64	15	283	12.14	21	1.04	18.33
	- 544		1		Gas		150			
		Permissible Li	mits (mg/l	Nm³)			Liquid		200	
					FCCU		400			

BDL-Below Detection Limit, Carbon Monoxide (as CO) BDL (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202201170110-116, 202201180110-115

Date: 26/01/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

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Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambien t Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity	Ca	rbon Monox (as CO)	ide
							(m/s)	mg/Nm³	Kg/hr	PPM
19	DCU Heater-1	17/01/2022	70	3	16	151	10.55	145	27.37	126.57
20	PTA/Hot Oil Heater	17/01/2022	60	2.35	15	70	8.13	148	16.33	129.19
21	PTA/Thermal Oxidiser	17/01/2022	50	2.35	16	148	10.41	1	0.12	0.87
22	PTA/FCPH	17/01/2022	60	2.35	16	153	10.78	6	0.71	5.24
23	DHDT BSIV	17/01/2022	70	1.8	16	123	9.71	4	0.27	3.49
24	HGU-BS-VI	17/01/2022	0	3.4	15	146	10.33	4	0.96	3.49
25	DHDS	17/01/2022	60	1.25	16	172	10.32	7	0.21	6.11
26	CCRU Reformer Heater-205 FF	18/01/2022	60	1.26	16	274	11.13	39	1.06	34.04
27	CCRU NHT Heater	18/01/2022	70	2.34	18	257	11.08	31	2.99	27.06
28	CCRU Reformer Heater-201, 202,203 FF	18/01/2022	60	1.64	17	275	11.33	30	1.41	26.19
29	DHDT H-01	18/01/2022	70	1.8	18	221	11.56	9	0.57	7.86
30	DHDT H-02	18/01/2022	70	1.8	18	232	12.10	6	0.39	5.24
31	RFCC Heater	18/01/2022	59	0.9	18	235	11.46	5	0.08	4.36
							Gas		150	1,50
	Pe	rmissible Limi		Liquid		200				
emark:			T	FCCU		400				

BDL-Below Detection Limit, Carbon Monoxide (as CO) BDL (LOQ-1.0)

Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

ULR No .:

TC 636622000000586-587

Test Report Date:

28/02/2022

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diameter	Ambie nt Temp.	Stack Temp . (°C)	Aveg. Gas Velocity		jen Sulphi as H₂S)	de
	& RUAD MA	(Citt's, 200)	(meter)	(meter)	(°C)	. ()	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	22/02/2022	70	1.9	25	132	9.82	BDL	1382	
2	SRU-26	22/02/2022	70	1.9	25	126	9.79	BDL	-	(*)
2	5KU-20	Permissible	Old		15					
		New		10						
	-			IS:1	1255 (P-4)				

BDL-Below Detection Limit, ¹ Hydrogen Sulphide (as H₂S)-BDL [LOQ- 0.1], Sample Analysed within six days from the date of sampling.



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202202220110-111

Test Report Date:

28/02/2022

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diameter	Amb	Stack Temp	Average Gas Velocity		s of Su as SO _X			s of Nitro (as NO _x)	gen
	- (4×7,004) 2 · · · ·	Village 4 2 av	(meter)	(meter)	p. (°C)	. (°C)	(m/s)	mg/N m³	Kg/	PPM	mg/N m ³	Kg/hr	PPI
	CDU F7	22/02/2022	70	1.9	25	132	9.82	32	2.4	12.2	46	3.39	24.4
1	SRU-57 SRU-26	22/02/2022	70	1.9	25	126	9.79	27	2.0	10.3	54	4.03	28.7
2	3KU-20	22/02/2022	1.00	- 35 S		Old					350		
		Permissible L	imits (mg/	Nm³)		New			and the second		250		

BDL-Below Detection Limit, Oxides of Sulphur (as SO_x)-BDL (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

202202220110-111

Test Report No .: Test Report Date:

28/02/2022

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diamet	Ambi ent Temp	Stack Temp . (°C)	Average Gas Velocity	Car	(as CO)	ide
			(meter	er (meter)	. (°C)	.(0)	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	22/02/2022	70	1.9	25	132	9.82	123	9.07	107.37
2	SRU-26	22/02/2022	70	1.9	25	126	9.79	114	8.51	99.51
				4			Old		150	
	P	ermissible Lim	its (mg/N		New		100			

BDE-Below Detection Limit, Carbon Monoxide (as CO) BDL (LOQ-1.0)

Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division)

Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By Test Report No.: 202203030115-120, 202203050110-113,202203070116-120 202203080111-114, 202203090122-123

Test Report Date: 22/03/2022

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diamet er	Ambie nt Temp.	Stack Temp. (°C)	Average Gas Velocity	Particu Matters¹ (& Vanadi s Ni & V)	
				(meter)	(°C)		(m/s)	mg/Nm³	Kg/h r	mg/Nm	Kg/h r	PPM
1	PX Isomer	03-03-2022	56	1.2	26	245	11.07	14.68	0.4	ND	(46	
2	PX Tatory	03-03-2022	56	1.2	26	245	11.16	16.23	0.4	ND		
3	PXCCR	03-03-2022	100	1.9	29	259	11.07	12.49	0.8	ND		*
4	PX-Xylene	03-03-2022	78	2	24	192	11.24	12.58	1.0	ND	*	16.
5	PX NHT	03-03-2022	30	1	28	246	11.41	14.37	0.3	ND	*	190
6	HGU 76	05-03-2022	60	3.4	31	169	11.09	11.26	2.8	ND	#1	
7	HGU-PDS	05-03-2022	60	-1.7	30	171	10.58	6.38	0.4	ND		
8	DHDT H-01	05-03-2022	70	1.8	27	174	12.00	8.26	0.6	ND		-
9	DHDT H-02	05-03-2022	70	1.8	31	186	11.99	9.26	0.7	ND	7.	
10	HCU	07-03-2022	70	1.3	28	198	11.74	9.16	0.3	ND		-
11	MSQ-1	07-03-2022	60	1.64	25	275	12.34	6.78	0.3	ND	- 2	
12	MSQ-2	07-03-2022	60	1.64	25	287	12.27	8.97	0.4	ND	8	
13	New Prime G	07-03-2022	60	0.8	27	319	12.03	9.25	0.1	ND		
14	AVU-II	07-03-2022	100	5.1	27	147	11.32	12.28	7.3	ND	-	
15	DCU Heater-1	08-03-2022	70	3	30	133	9.83	8.28	1.5	ND		
16	DHDS	08-03-2022	60	1.25	31	214	11.45	8.80	0.3	ND	*	-
17	OHCU LP Section	08-03-2022	65	2.42	33	235	11.26	11.29	1.2	ND	*	
18	OHCU RG Heater	08-03-2022	63	1.35	33	261	11.51	9.24	0.3	ND	-	-
19	CCRU NHT Heater-FF 204	09-03-2022	70	2.34	30	264	12.19	9.28	1.0	ND	- 8	-
20	CCRU Reformer Heater- FF 202 and FF 203	09-03-2022	70	2.34	31	273	12.61	8.23	0.9	ND	*	-
	Pe	rmissible Limi	ts (mg/Nm	3)			Gas	10)		· ·	
							Liquid	10	0		5	
		Te	st Method	(8)				IS-1125	5 (P-1)	USEPA	Method AAS	29 By

Remark:

No. Pedevo Detection Limit, ¹ Particulate Matters (as PM)-ND [LOQ- 5.0], ² Nickel & Varsolium (as Ni & V)*-ND [LOQ- 0.5] Sample Analysed within six days from the date of sampling.

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(RAVINDER MITTAL)

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Sample Particulars

Nature of the Sample

Purpose of Monitoring

Monitoring Conducted By

Method of Sampling

NITYA LABORATORIES

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Issued to: M/s Indian Oil Corporation Limited

Haryana, INDIA

(Refinery Division) Panipat Refinery, Distt. Panipat

Himmat, Jammu-180 015, J&K (UT), India

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Test Report

Test Repret No.: 202203090124-125, 202203100132-133, 202203120110-115

202203140116-117, 202203150119-120, 202203160110-112

Test Report Date: 22/03/2022

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambien t Temp. (°C)	Stack Temp. (°C)	e Gas Velocity	Particul Matters ¹ (a			l & Vanad as Ni & V)	
			XXE- X91	8 8		4	(m/s)	mg/Nm³	Kg/ hr	mg/Nm³	Kg/hr	PPM
21	DHDT BSVI	09-03-2022	70	1.8	31	178	11.17	6.80	0.5	ND		- 20
22	HGU-BS-VI	09-03-2022	0	3.4	31	204	11.04	9.10	2.1	ND	(*)	
23	CCRU Reformer Heater-205 FF	10-03-2022	60	1.26	28	228	11.55	9.46	0.29	ND	*	3.00
24	CCRU Reformer Heater-201, 202,203 FF	10-03-2022	60	1.64	29	281	11.48	8.48	0.4	ND	3	-
25	HRSG-2	12-03-2022	65	3.3	27	143	10.37	9.26	2.1	ND	1.5	
26	HRSG-3	12-03-2022	70	3.3	28	153	11.08	10	2.4	ND		
27	HRSG-4	12-03-2022	70	3.3	28	160	11.25	12	2.9	ND	14	97
28	HRSG-5	12-03-2022	70	3.3	28	147	10.90	11.19	2.7	ND	320	-
29	CPP-VHP-2	12-03-2022	100	3.34	26	139	10.75	12.16	3.0	ND	1	20
30	CPP-VHP-3	12-03-2022	100	3.34	26	162	10.84	10.38	2.4	ND		3
31	AVU-1	14-03-2022	100	5.1	30	130	10.56	14.28	8.2	ND	-	-
32	HGU-06	14-03-2022	0	3,4	30	203	10.41	10.28	2.2	ND	30	-
33	UB-02	15-03-2022	100	3.04	28	161	10.38	13.28	2.5	ND	*	-
34	UB-01	15-03-2022	100	3.04	28	154	10.24	10.2	1.9	ND	-	-
35	PTA/Thermal Oxidiser	16-03-2022	60	2.35	32	121	9.20	14.28	1.6	ND	•	*
36	PTA/FCPH	16-03-2022	60	2.35	31	193	11.75	11.18	1.3	ND	**	~
		Permissible	Limits (mg/f	· m³)			Gas	10	N		-	
				Liquid	100			5				
			Test Meth	od				IS-11255	(P-1)	USEPA	Method 29	By AAS

ND-Below Detection Limit, 1 Particulate Matters (as PM)-ND [LOQ- 5.0], 2 Nickel & Vanadium (as N & V)*ND [LOQ- 0.5] Sample Analysed within six days from the date of sampling.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.: 202203030115-120, 202203050110-113,202203070116-120

202203080111-114, 202203090122-123

Test Report Date: 22/03/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack . Diamete r	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity	7.27547002	es of Sulph (as SOx)	nur	Oxio	des of Nitro (as NO _x)	
-				(meter)			(m/s)	mg/Nm³	Kg/hr	PPM	mg/N m³	Kg/hr	PPM
1	PX Isomer	03-03-2022	56	1.2	26	245	11.07	6	0.2	2.3	70	1.82	37.21
2	PX Tatory	03-03-2022	56	1.2	26	245	11.16	4	0.1	1.5	87	2.28	46.24
3	PXCCR	03-03-2022	100	1.9	29	259	11.07	6	0.4	2.3	105	6.65	55.81
4	PX-Xylene	03-03-2022	78	2	24	192	11.24	3	0.2	1.1	53	4.32	28.17
5	PX NHT	03-03-2022	30	1	28	246	11.41	3	0.1	1.1	96	1.78	51.03
6	HGU 76	05-03-2022	60	3.4	31	169	11.09	18	4.4	6.9	36	8.80	19.13
7	HGU-PDS	05-03-2022	60	1.7	30	171	10.58	12	0.7	4.6	2	0.12	1.06
8	DHDT H-01	05-03-2022	70	1.8	27	174	12.00	6	0.4	2.3	111	8.14	59.00
9	DHDT H-02	05-03-2022	70	1.8	31	186	11.99	7	0.5	2.7	107	7.63	56.87
10	HCU	07-03-2022	70	1.3	28	198	11.74	10	0.4	3.8	132	4.69	70.16
11	MSQ-1	07-03-2022	60	1.64	25	275	12.34	3	0.2	1.1	64	3.27	34.02
12	MSQ-2	07-03-2022	60	1.64	25	287	12.27	3	0.1	1.1	88	4.37	46.77
13	New Prime G	07-03-2022	60	0.8	27	319	12.03	8	0.1	3.1	78	0.85	41.46
14	AVU-II	07-03-2022	100	5.1	27	147	11.32	3	1.8	1.1	14	8.27	7.44
15	DCU Heater-1	08-03-2022	70	3 -	30	133	9.83	16	2.9	6.1	23	4.22	12.23
16	DHDS	08-03-2022	60	1.25	31	214	11.45	3	0.1	1.1	64	1.98	34.02
17	OHCU LP Section	08-03-2022	65	2.42	33	235	11,26	3	0.3	1.1	49	5.36	26.04
18	OHCU RG Heater	08-03-2022	63	1.35	33	261	11.51	3	0.1	1.1	60	1.99	31.89
19	CCRU NHT Heater- FF 204	09-03-2022	70	2.34	30	264	12.19	6	0.6	2.3	90	9.43	47.84
20	CCRU Reformer Heater-FF 202 and FF 203	09-03-2022	70	2.34	31	273	12.61	3	0.3	1.1	76	8.10	40.40
		Permissible Li	imits (mg/Nn	n³)			Gas		50			350	
							Liquid		1700			450	

ND-Below Detection Limit, Oxides of Sulphur (as SO_xI-ND (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyse

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA Test Report No.: 202203090124-125, 202203100132-133, 202203120110-115

202203140116-117, 202203150119-120, 202203160110-112

Test Report Date: 22/03/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambie nt Temp.	Stack Temp. (°C)	Average Gas Velocity	Oxi	des of Sulp (as SO _x)	hur	Oxi	des of Nitr (as NO _x)	
			Para Carre	344004000	(°C)		(m/s)	mg/N m³	Kg/hr	PPM	mg/N m³	Kg/hr	PPM
21	DHDT BSIV	09-03-2022	70	1.8	31	178	11.17	ND	ND	ND	27	1.83	14.35
22	HGU-BS-VI	09-03-2022	0	3.4 .	31	204	11.04	6	1.4	2.3	47	10.60	24.98
23	CCRU Reformer Heater-205 FF	10-03-2022	60	1.26	28	228	11.55	6	0.2	2,3	94	2.90	49.96
24	CCRU Reformer Heater-201, 202,203 FF	10-03-2022	60	1.64	29	281	11.48	3	0.1	1.1	84	3.95	44.65
25	HRSG-2	12-03-2022	65	3.3	27	143	10.37	12	2.7	4.6	79	18.08	41.99
26	HRSG-3	12-03-2022	70	3.3	28	153	11.08	5	1.2	1.9	63	15.04	33.49
27	HRSG-4	12-03-2022	70	3.3	28	160	11.25	3	0.7	1.1	57	13.59	30.30
28	HRSG-5	12-03-2022	70	3.3	28	147	10.90	33	7.9	12.6	178	42.41	94.61
29	CPP-VHP-2	12-03-2022	100	3.34	26	139	10.75	0	0.0	0.0	119	29.20	63.25
30	CPP-VHP-3	12-03-2022	100	3.34	26	162	10.84	157	36.8	59.9	320	75.00	170.0
31	AVU-1	14-03-2022	100	5.1	30	130	10.56	3	1.7	1.1	71	40.79	37.74
32	HGU-06	14-03-2022	0	3.4	30	203	10.41	8	1.7	3.1	23	4.90	12.23
33	UB-02	15-03-2022	100	3.04	28	161	10.38	142	26.5	54.2	162	30.18	85.11
34	UB-01	15-03-2022	100	3.04	28	154	10.24	167	31.2	63.7	94	17.56	49.96
35	PTA/Thermal Oxidiser	16-03-2022	60	2.35	32	121	9.20	36	3.9	13.7	64	6.95	34.02
36	PTA/FCPH	16-03-2022	60	2,35	31	193	11.75	9	1.1	3.4	173	20.30	91.95
	7%	Permissible Li	mits (mg/Nn	n³)			Gas		50			350	
				174			Liquid		1700			450	

ND-Below Detection Limit, Oxides of Sulphur (as SO₂)-ND (LOQ-1.0)

Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Sample Particulars

Nature of the Sample

Purpose of Monitoring

Monitoring Conducted By

Method of Sampling

NITYA LABORATORIES

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

9 43, Sector-A1 Ext., Bhalla Enclave, Channi Himmat, Jammu-180 015, J&K (UT), India

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Test Report No.: 202203030115-120, 202203050110-113,202203070116-120

202203080111-114, 202203090122-123

info@nityalab.com @www.nityalab.com

Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

: Stack Monitoring

: To Check the Pollution Load

Test Report Date: 22/03/2022

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)		(as CO)	ae
			(metal)		C349769	3.70	2	mg/Nm³	Kg/hr	PPM
1	PX Isomer	03-03-2022	56	1.2	26	245	11.07	4	0.10	3.49
2	PX Tatory	03-03-2022	56	1.2	26	245	11.16	7	0.18	6.11
3	PXCCR	03-03-2022	100	1.9	29	259	11.07	19	1.20	16.59
4	PX-Xylene	03-03-2022	78	2	24	192	11.24	ND	248	
5	PX NHT	03-03-2022	30	1	28	246	11.41	11	0.20	9.60
6	HGU 76	05-03-2022	60	3.4	31	169	11.09	1	0.24	0.87
7	HGU-PDS	05-03-2022	60	1.7	30	171	10.58	5	0.29	4.36
8	DHDT H-01	05-03-2022	70	1.8	27	174	12.00	4	0.29	3.49
9	DHDT H-02	05-03-2022	70	1.8	31	186	11.99	8	0.57	6.98
10	HCU	07-03-2022	70	1.3	28	198	11.74	12	0.43	10.47
11	MSQ-1	07-03-2022	60	1.54	25	275	12.34	5	0.26	4.36
12	MSO-2	07-03-2022	60	1.64	25	287	12.27	20	0.99	17.46
13	New Prime G	07-03-2022	60	0.8	27	319	12.03	128	1.40	111.73
14	AVU-II	07-03-2022	100	5.1	27	147	11.32	134	79.20	116.97
15	DCU Heater-1	08-03-2022	70	3	30	133	9.83	12	2.20	10.47
16	DHDS	08-03-2022	60	1.25	31	214	11.45	1	0.03	0.87
17	OHCU LP Section	08-03-2022	65	2.42	33	235	11.26	10	1.09	8.73
18	OHCU RG Heater	08-03-2022	63	1.35	33	261	11.51	9	0.30	7.86
19	CCRU NHT Heater- FF 204	09-03-2022	70	2.34	30	264	12.19	9	0.94	7.86
20	CCRU Reformer Heater-FF 202 and FF 203	09-03-2022	70	2.34	31	273	12.61	19	2.02	16.59
	al monocratical				*		Gas		150	***
		Permissible L	imits (mg/N	m³)			Liquid		200	
				. 10			FCCU		400	

ND-Relow Detection Limit. Carbon Monoxide (as CO) ND (LOO-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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(RAVINDER MITTAL)

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Sample Particulars

Nature of the Sample

Purpose of Monitoring

Monitoring Conducted By

Method of Sampling

NITYA LABORATORIES

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

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202203140116-117, 202203150119-120, 202203160110-112

Test Report No.: 202203090124-125, 202203100132-133, 202203120110-115

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Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

: Stack Monitoring

: To Check the Pollution Load

Test Report Date: 22/03/2022

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diameter	Ambient Temp.	Stack Temp.	Average Gas Velocity	Car	bon Monoxid (as CO)	le
			(meter)	(meter)	(°C)	(°C)	(m/s)	mg/Nm³	Kg/hr	PPM
21	DHDT BSIV	09-03-2022	70	1.8	31	178	11.17	15	1.01	13.09
22	HGU-BS-VI	09-03-2022	0	3.4	31	204	11.04	6	1.35	5.24
23	CCRU Reformer Heater- 205 FF	10-03-2022	60	1.26	28	228	11.55	1	0.03	0.87
24	CCRU Reformer Heater- 201, 202,203 FF	10-03-2022	60	1.64	29	281	11.48	14	0.66	12.22
25	HRSG-2	12-03-2022	65	3.3	27	143	10.37	39	8.93	34.04
26	HRSG-3	12-03-2022	70	3.3	28	153	11.08	12	2.87	10.47
27	HRSG-4	12-03-2022	70	3.3	28	160	11.25	ND		15
28	HRSG-5	12-03-2022	70	3.3	28	147	10.90	ND	(*)	•
29	CPP-VHP-2	12-03-2022	100	3.34	26	139	10.75	142	34.84	123.95
30	CPP-VHP-3	12-03-2022	100	3.34	26	162	10.84	137	32.11	119.59
31	AVU-1	14-03-2022	100	5.1	30	130	10.56	ND	70	
32	HGU-06	14-03-2022	0	3.4	30	203	10.41	5	1.07	4.36
33	UB-02	15-03-2022	100	3.04	28	161	10.38	52	9.69	45.39
34	UB-01	15-03-2022	100	3.04	28	154	10.24	59	11.02	51.50
35	PTA/Thermal Oxidiser	16-03-2022	60	2.35	32	121	9.20	189	20.54	164.98
36	PTA/FCPH	16-03-2022	60	2.35	31	193	11.75	11	1.29	9.60
	100			1			Gas		150	1
		Permissible Lin	nits (mg/Nm	13)			Liquid		200	
		remissible till	(6)	*			FCCU		400	

ND-Below Detection Limit, Carbon Monoxide (as CO) ND (LOO-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA Test Report No.:202203140118-119 Test Report Date: 22/03/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambient ` Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity		gen Sulph (as H ₂ S)	ide
×.			350000000000000000000000000000000000000		1,322.00	+	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	14-03-2022	70	1.9	33	220	11.68	ND	-	
2	SRU-26	14-03-2022	70	1.9	33	228	11.80	ND		*
		Per	missible Lim	its (mg/Nm³)					15	
				IS:	L1255 (P-4)				

Remark

ND-Below Detection Limit, ¹ Hydrogen Sulphide (as H₂S)-ND [LOQ- 0.1], Sample Analysed within six days from the date of sampling.

(AUTHORISED SIGNATORY)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report

Test Report No.:202203140118-119 Test Report Date: 22/03/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No. 1	Stack Particulars	Date of Sampling	Stack Height (meter	Stack Diameter (meter)	Ambien t Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity	100 00000000000000000000000000000000000	s of Sulp as SO _X)	hur		es of Nitro (as NO _x)	ogen
)	187			(m/s)	mg/N m³	Kg/h r	PPM	mg/N m³	Kg/h r	PPM
1	SRU-57	14-03-2022	70	1.9	33	220	11.68	26	1.9	9.9	57	4.11	30.30
2	SRU-26	14-03-2022	70	1.9	33	228	11.30	19	1.4	7.3	74	5.30	39.33
		Pern	nissible Lim	its (mg/Nm³)				140			350	170

ND-Below Detection Limit, Oxides of Sulphur (as SO_x)-ND (LOQ-1.0) ysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division)
Panipat Refinery, Distt. Panipat
Haryana, INDIA

18

: Stack Monitoring : To Check the Pollution Load : IS: 11255 (Part 7)

Test Report No.:202203140118-119

Test Report Date: 22/03/2022

: Mr. Rishi Pal

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambie nt Temp.	Stack Temp. (°C)	Average Gas Velocity	Car	bon Monox (as CO)	ide
			2-1-538/	A	(°C)	* 2	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	14-03-2022	70	1.9	33	220	11.68	143	10.31	124.83
2	SRU-26	14-03-2022	70	1.9	33	228	11.80	138	9.89	120.46
		Permis	î.		150					

Domark

ND-Below Detection Limit, Carbon Monoxide (as CO) ND (LOQ-1.0)

Semple Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202204300150-151

Test Report Date:

06/05/2022

Sample Particulars

Nature of the Sample

Stack Monitoring

Purpose of Monitoring

To Check the Pollution Load

Method of Sampling

IS: 11255 (Part 7)

Monitoring Conducted By

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambie nt Temp.	Stack Temp . (°C)	Aveg. Gas Velocity		gen Sulphi as H₂S)	de
					(°C)	3 (5)	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	30/04/2022	70	1.9	34	225	11.06	BDL	-	-
2	SRU-26	30/04/2022	70	1.9	34	220	10.97	BDL	-	127
		6 9		15						
				IS:11	L255 (P-4)				

BDL-Below Detection Limit, 1 Hydrogen Sulphide (as H₂S)-BDL [LOQ- 0.1], Sample Analysed within six days from the date of sampling

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Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202204300150-151

Test Report Date:

06/05/2022

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Amb ient Tem	Stack Temp . (°C)	Average Gas Velocity	100000000000000000000000000000000000000	es of Su (as SO _x)		Oxid	es of Nitro (as NO _x)	
				8 000	p. (°C)	1000	(m/s)	mg/N m³	Kg/ hr	РРМ	mg/ Nm³	Kg/hr	PPM
1	SRU-57	30/04/2022	70	1.9	34	225	11.06	226	18.8	86.2	8	0.66	4.25
2	SRU-26	30/04/2022	70	1.9	34	220	10.97	268	22.4	102.3	10	0.84	5.32
		Permiss				FC 101		350					

BDL-Below Detection Limit, Oxides of Sulphur (as SOx)-BDL (LOQ-1.0)
Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyse

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(RAVINDER MITTAL)

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Test Report

Issued To M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202204300150-151

Test Report Date:

06/05/2022

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

: To Check the Pollution Load

IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter	Stack Diamet er	Ambi ent Temp	Stack Temp . (°C)	Average Gas Velocity	Car	on Monox (as CO)	ide
8)	(meter)	. (°C)		(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	30/04/2022	70	1.9	34	225	11.06	134	11.13	71.22
2	SRU-26	30/04/2022	70	1.9	34	220	10.97	132	11.04	70.16

Remark

BDL-Below Detection Limit, Carbon Monoxide (as CO) BDL (LOQ-1.0)
Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division)

Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By Test Report No.: 202205060111-112, 202205070116-119, 202205090110-111 202205100114-117, 202205110110-113, 202205120123-126

Test Report Date: 28/05/2022

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diamet er	Ambie nt Temp.	Stack Temp. (°C)	Average Gas Velocity	Particu Matters ¹ (& Vanadi s Ni & V) ²	
				(meter)	(°C)		(m/s)	mg/Nm³	Kg/h r	mg/Nm 3	Kg/h r	PPM
	HGU 76	06-05-2022	60	3,4	41	259	11.43	12.49	0.3	ND	-	
2	HGU-PDS	06-05-2022	60	1.7	40	265	11.47	8.36	0.2	ND		
0000	HRSG-1	07-05-2022	65	3.3	34	155	8.99	8.25	0.5	ND	-	
3	MACON TO	07-05-2022	70	3.3	34	157	8.79	12.34	0.9	ND	-	
4	HRSG-2	The state of the s	30000	3.3	36	151	11.89	14.28	0.3	ND	-	14
5	HRSG-3	07-05-2022	70	100000			9.86	10.38	2.3	ND	-	
6	HRSG-5	07-05-2022	70	3.3	36	167	11/1/4/4/4	3707(-385A)	0.8	Allena	7-5	-
7	AVU-II	09-05-2022	100	5.1	36	149	9.60	14.27	2000000	ND		-
8	HCU	09-05-2022	70	1.3	38	182	10.66	17.28	1.1	ND		-
9	DHDT H-01	10-05-2022	70	1.8	39	192	10.82	9.37	0.6	ND		
10	DHDT H-02	10-05-2022	70	1.8	39	199	10.51	8.56	0.3	ND	-	
11	DCU Heater-1	10-05-2022	70	3	38	147	8.87	12.23	0.6	ND		-
12	DHDS	10-05-2022	60	1.25	39	226	10.87	8,24	0.2	ND	-	-
13	CCRU Reformer Heater- 201, 202,203 FF	11-05-2022	60	1.64	36	286	12.75	9.21	0.5	ND		
14	OHCU LP Section	11-05-2022	65	2.42	37	228	11.35	8.35	0.9	ND	~	72
2000		11-05-2022	63	1.35	37	273	10.92	7.48	0.2	ND	-	-
15	OHCU RG Heater			1	-5331	202	11.58	7.69	0.7	ND	-	-
16	CCRU NHT Heater-FF 101	11-05-2022	70	2.34	36	282		8.58	0.9	ND		
17	MSQ-1	12-05-2022	60	1.64	38	267	11.18	33330				
18	MSQ-2	12-05-2022	60	1.64	39	282	11.58	9.38	0.3	ND		-
19	MSQ-3	12-05-2022	60	1.64	37	305	11.92	6.29	0.6	ND		_
20	CCRU Reformer Heater- FF 205	12-05-2022	70	2.34	38	240	11.02	9.2	0.9	ND	-	-
	7,50,100,000	rmissible Limi	ts (mg/Nn	n ³)			Gas	1	.0		•	
							Liquid	1	00		5	
		Те	st Method					IS-112	55 (P-1)	USEP	A Method	29 B

ND-Below Detection Limit, ¹ Particulate Matters (as PM)-ND [LOQ-5.0], ¹ Nickel & Vanadium (as N & V)*-ND [LOQ-0.5] Sample Analysed within six days from the date of sampling.

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Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

Test Report

Test Report No.: 202205140114-116, 202205160116-117, 202205170110-112

202205180116-118, 202205190162-163, 202205200136-138

Test Report Date: 28/05/2022

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambien t Temp. (°C)	Stack Temp. (°C)	Averag e Gas Velocity	Particula Matters ¹ (a			I & Vanadi as Ni & V) ²	
			,		. A-2.351		(m/s)	mg/Nm³	Kg/ hr	mg/Nm³	Kg/hr	PPM
21	DHDT BS VI	14-05-2022	70	1.8	39	182	10.12	9.45	0.6	ND	.48	-
22	HGU-BS-VI	14-05-2022	0	3.4	39	208	10.52	8.23	1.8	ND		2,47
23	RFCC Feed Charger	14-05-2022		2.1	38	284	11.97	9.3	0.74	ND	*	
24	AVU-1	16-05-2022	100	5.1	39	145	9.53	12.28	6.1	ND	*	
25	HGU-06	16-05-2022	0	3.4	40	212	11.09	11.2	2.5	ND	*	12
26	UB-01	17-05-2022	100	3.04	40	155	10.12	10.38	1.9	ND	-	- 6
27	CPP-VHP-1	17-05-2022	100	3.34	39	156	9.60	10.38	2.2	ND	8	12
28	CPP-VHP-2	17-05-2022	100	3,34	39	168	10.55	9.48	2.1	ND	-	-
29	PTA/Thermal Oxidiser	18-05-2022	60	2.35	36	79	9.73	11.34	1.5	ND		
30	PTA/FCPH	18-05-2022	60	2.35	36	200	10.20	10.37	1.0	ND		*
31	PTA/Hot Oil Heater	18-05-2022	60	2.35	37	264	10.10	13.28	1.2	ND	i i	*
32	PXCCR	19-05-2022	100	1.9	39	278	11.26	8.28	0.5	ND		-
33	PX NHT	19-05-2022	30	1	39	265	11.59	9.24	0.2	ND	-	
34	PX Isomer	20-05-2022	56	1.2	40	289	11.84	11.28	0.3	ND	-	-
35	PX Tatory	20-05-2022	56	1.2	40	275	11.93	13.15	0.3	ND		9
36	PX-Xylene	20-05-2022	78	2	39	213	11.73	10.37	0.8	ND		-
	10000	Permissible	Limits (mg/	Gas	10			9				
			Liquid	10	0		5					
			Test Meth	nod				15-1125	5 (P-1)	USEPA	Method 2	By AA

Remark:

ND-Below Detection Limit, ¹ Particulate Matters (as PM)-ND [LOQ- 5.0], ² Notel & Vanadium (as Ni & V)*-ND [LOQ- 0.5] Sample Analysed within six days from the date of sampling.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202205060111-112, 202205070116-119, 202205090110-111 202205100114-117, 202205110110-113, 202205120123-126

Test Report Date: 28/05/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diamete	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity	0.557,570,575	s of Sulph as SO _x)	iur	Oxid	(as NO _x)	gen
			(meter)	(meter)	1.57	/	(m/s)	mg/Nm³	Kg/hr	PPM	mg/N m³	Kg/hr	PPM
1	HGU 76	06-05-2022	60	3.4	41	259	11.43	3	0.6	1.1	27	5.65	14.35
2	HGU-PDS	06-05-2022	60	1.7	40	265	11.47	3	0.2	1.1	1	0.05	0.53
3	HRSG-1	07-05-2022	65	3.3	34	155	8.99	9	1.7	3.4	14	2.70	7,44
4	HRSG-2	07-05-2022	70	3.3	34	157	8.79	234	43.9	89.3	8	1.50	4.25
- 10		07-05-2022	70	3.3	36	151	11.89	9	2.3	3.4	17	4.38	9.04
5	HRSG-3	The William No. Chipping C.	01000	3.3	36	167	9.86	14	2.9	5.3	10	2.06	5.32
6	HRSG-5	07-05-2022	70	15/25/2	5.5	149	9.60	287	143.2	109.5	4	2.00	2.13
7	AVU-II	09-05-2022	100	5.1	36		430000	1945000	0.2	1.9	9	0.30	4.78
8	HCU	09-05-2022	70	1.3	38	182	10.66	5	0.2	1.1	41	2.61	21.79
9	DHDT H-01	10-05-2022	70	1.8	39	192	10.82	3	0.2	2.3	6	0.36	3.19
10	DHDT H-02	10-05-2022	70	1.8	39	199	10.51	6	-		6	0.96	3.19
11	DCU Heater-1	10-05-2022	70	3	38	147	8.87	27	4.3	10.3		0.98	0.53
12	DHDS	10-05-2022	60	1.25	39	226	10.87	6	0.2	2.3	1	20000	1905000
13	CCRU Reformer Heater-201, 202,203 FF	11-05-2022	60	1.64	36	286	12.75	6	0.3	2.3	4	0.21	2.13
14	OHCU LP Section	11-05-2022	65	2.42	37	228	11.35	8	0.9	3.1	6	0.67	3.19
15	OHCU RG Heater	11-05-2022	63	1.35	37	273	10.92	2	0.1	0.8	1	0.03	0.53
16	CCRU NHT Heater-FF 101	11-05-2022	70	2.34	36	282	11.58	6	0.6	2.3	1	0.10	0.53
17	MSQ-1	12-05-2022	60	1.64	38	267	11.18	3	0.1	1.1	В	0.38	4.25
18	MSQ-2	12-05-2022	60	1.64	39	282	11.58	3	0.1	1.1	2	0.09	1.06
19	MSQ-3	12-05-2022	60	1.64	37	305	11.92	3	0.1	1.1	66	3.09	35.0
0,000 (1)	A15 100 \$ 220	September 1			38	240	11.02	4	0.4	1.5	4	0.40	2.13
20	CCRU Reformer Heater-FF 205	12-05-2022	70	2,34	38	240		e7#≤	(S.#1200)	of the same		9500000	S7055
		Permissible L	imits (mg/N	lm³)			Gas		50	100		350	
							Liquid		1700		TO N	450	

Remark:

ND-Bolow Detection Limit, Oxides of Sulphur (as SDx)-ND (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

(RAVINDER MITTAL)

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Test Report No.: 202205140114-116, 202205160116-117, 202205170110-112

202205180116-118, 202205190162-163, 202205200136-138

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

: Stack Monitoring

: To Check the Pollution Load

Test Report Date: 28/05/2022

: IS: 11255 (Part 7) : Mr. Rishi Pal

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

Analysis Report

Şr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diamet	Ambie nt Temp.	Stack Temp. (°C)	Averag e Gas Velocit	5837000000	s of Sulphi as SO _x)	ur	Oxid	es of Nitr (as NO _x)	ogen
			(meter)	(meter)	(°C)		y (m/s)	mg/Nm ³	Kg/hr	PPM	mg/N m³	Kg/h r	PPM
21	DHDT BS VI	14-05-2022	70	1.8	39	182	10.12	0	0.0	0.0	22	1.34	11.69
22	HGU-BS-VI	14-05-2022	0	3.4	39	208	10.52	4	0.9	1.5	18	3.84	9.57
23	RFCC Feed Charger	14-05-2022		2.1	38	284	11.97	6	0.5	2.3	1	0.08	0.53
24	AVU-1	16-05-2022	100	5.1	39	145	9.53	191	95.5	72.9	1	0.50	0.53
25	HGU-06	16-05-2022	0	3.4	40	212	11.09	3	0.7	1.1	1	0.22	0.53
26	UB-01	17-05-2022	100	3.04	40	155	10.12	228	42.0	87.0	23	4.24	12.23
27	CPP-VHP-1	17-05-2022	100	3.34	39	156	9.60	180	37.9	68.7	5	1.05	2.66
28	CPP-VHP-2	17-05-2022	100	3.34	39	168	10.55	234	52.6	89.3	110	24.7	58.47
29	PTA/Thermal Oxidiser	18-05-2022	60	2.35	36	79	9.73	6	0.8	2.3	1	0.13	0.53
30	PTA/FCPH	18-05-2022	60	2.35	36	200	10.20	8	0.8	3.1	11	1.10	5.85
31	PTA/Hot Oil Heater	18-05-2022	60	2.35	37	264	10.10	9	8.0	3.4	42	3.68	22.32
32	PXCCR	19-05-2022	100	1.9	39	278	11.26	9	0.6	3.4	24	1.49	12.76
33	PX NHT	19-05-2022	30	1	39	265	11.59	4	0.1	1.5	12	0.22	5.38
34	PX Isomer	20-05-2022	56	1.2	40	289	11.84	8	0.2	3.1	6	0.15	3.19
35	PX Tatory	20-05-2022	56	1.2	40	275	11.93	9	0.2	3.4	9	0.24	4.78
36	PX-Xylene	20-05-2022	78	2	39	213	11.73	12	1.0	4.6	6	0.49	3.19
		Permissible Lin	nits (mg/Nm	13)	11.		Gas		50 1700			350 450	

ND-Below Detection Limit, Oxides of Sulphur (as SO₂)-ND (LOQ-1.0) mple Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202205060111-112, 202205070116-119, 202205090110-111 202205100114-117, 202205110110-113, 202205120123-126

Test Report Date: 28/05/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

r. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diameter (meter)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)	Ca	rbon Monoxio (as CO)	ie .
			(meter)	(meter)	(-0)	()	(, -)	mg/Nm ³	Kg/hr	PPM
		A	60	3.4	41	259	11.43	27	5.65	23.57
1	HGU 76	06-05-2022		1.7	40	265	11.47	1	0.05	0.87
2	HGU-PDS	06-05-2022	60	1.755.0	34	155	8.99	14	2.70	12.22
3	HRSG-1	07-05-2022	65	3.3	87.	939		8	1.50	6.98
4	HRSG-2	07-05-2022	70	3.3	34	157	8.79	57.857	4.38	14.84
5	HRSG-3	07-05-2022	70	3.3	36	151	11.89	17	20000000	N = 5 = 1
6	HRSG-5	07-05-2022	70	3.3	36	167	9.86	10	2.06	8.73
7	AVU-II	09-05-2022	100	5.1	36	149	9.60	4	2.00	3.49
8	HCU	09-05-2022	70	1.3	38	182	10.66	9	0.30	7.86
9	DHDT H-01	10-05-2022	70	1.8	39	192	10.82	41	2.61	35.79
10	DHDT H-02	10-05-2022	70	1.8	39	199	10.51	6	0.36	5.24
11	DCU Heater-1	10-05-2022	70	3	38	147	8.87	6	0.96	5.24
12	DHDS	10-05-2022	60	1.25	39	226	10.87	1	0.03	0.87
13	CCRU Reformer Heater-201, 202,203 FF	11-05-2022	60	1.64	36	286	12.75	4	0.21	5.24
14	OHCU LP Section	11-05-2022	65	2.42	37	228	11.35	6	0.67	1000000
15	OHCU RG Heater	11-05-2022	63	1.35	37	273	10.92	1	0.03	0.87
16	CCRU NHT Heater-	11-05-2022	70	2.34	36	282	11.58	1	0.10	0.87
12	FF 101 MSQ-1	12-05-2022	60	1.64	38	267	11.18	8	0.38	6.98
17	10110001980.155		60	1.64	39	282	11.58	2	0.09	1.75
18	MSQ-2	12-05-2022	77.5955	1118365	1000		11.92	66	3.09	57.61
19	MSQ-3	12-05-2022	60	1.64	37	305		1	12/18/19/8	3.49
20	CCRU Reformer Heater-FF 205	12-05-2022	70	2.34	38	240	11.02	4	0.40	3.49
	1140000 11 2000			12. Leave			Gas		150	
		Permissible I	Limits (mg/f	Nm³)			Liquid		200	
							FCCU		400	

ND-Below Detection Limit, Carbon Monoxide (as CO) ND (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyses

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division)

Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202205140114-116, 202205160116-117, 202205170110-112 202205180116-118, 202205190162-163, 202205200136-138

Test Report Date: 28/05/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height	Stack Diameter	Ambient Temp.	Stack Temp.	Average Gas Velocity	Car	rbon Monoxio (as CO)	de
			(meter)	(meter)	(°C)	(°C)	(m/s)	mg/Nm³	Kg/hr	PPM
21	DHDT BS VI	14-05-2022	70	1.8	39	182	10.12	22	1.34	19.20
22	HGU-BS-VI	14-05-2022	0	3.4	39	208	10.52	18	3.84	15.71
23	RFCC Feed Charger	14-05-2022		2.1	38	284	11.97	1	80.0	0.87
24	AVU-1	16-05-2022	100	5.1	39	145	9.53	1	0.50	0.87
25	HGU-06	16-05-2022	0	3.4	40	212	11.09	1	0.22	0.87
26	UB-01	17-05-2022	100	3.04	40	155	10.12	23	4.24	20.08
27	CPP-VHP-1	17-05-2022	100	3.34	39	156	9.60	5	1.05	4.36
28	CPP-VHP-2	17-05-2022	100	3.34	39	168	10.55	110	24.73	96.02
29	PTA/Thermal Oxidiser	18-05-2022	60	2.35	36	79	9.73	1	0.13	0.87
30	PTA/FCPH	18-05-2022	60	2.35	36	200	10.20	11	1.10	9.60
1,545/11	PTA/Hot Oil Heater	18-05-2022	60	2,35	37	254	10.10	42	3.68	36.66
31	CONTRACTOR OF THE PROPERTY OF	19-05-2022	100	1.9	39	278	11.26	24	1.49	20.95
32	PXCCR	19-05-2022	30	1	39	265	11.59	12	0.22	10.47
33	PX NHT	20-05-2022	56	1.2	40	289	11.84	6	0.15	5.24
34	PX Isomer	1997 - 1997 / 1997 / 1997	200	1.2	40	275	11.93	9	0.24	7.86
35	PX Tatory	20-05-2022	56	5000010	8/2			6	0.49	5.24
36	PX-Xylene	20-05-2022	78	2	39	213	11.73		3/2/11/2011	3.53
		•					Gas		150 200	
		Permissible Lin	nits (mg/Nn	n ³)			Liquid		10007(3)	
							FCCU		400	

Remark:

ND-Below Detection Limit, Carbon Monoxide (as CO) ND (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202205190160-161

Test Report Date: 28/05/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	culars Sampling Height Diameter Temp. Te	Diameter	Stack Temp. (°C)	Average Gas Velocity	Hydro	Hydrogen Sulphide (as H ₂ S)		
			(meter)	(meter)	()		(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	19-05-2022	70	1.9	39	223	11.47	ND	-	
2	SRU-26	19-05-2022	70	1.9	40	245	12.08	ND	26	*
		Per	missible Lin	nits (mg/Nm³)	in the second			15	
			Test M	ethod				IS:	11255 (P-	1)

ND-Below Detection Limit, ¹ Hydrogen Sulphide (as H₂S)-ND [LOQ- 0.1], Sample Analysed within six days from the date of sampling.

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Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202205190160-161

Test Report Date: 28/05/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter	Stack Diameter (meter)	Ambien t Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity		s of Sulp as SO _x)	hur	Oxid	es of Nitro (as NO _x)	
)	(meso,)	(- 2		(m/s)	mg/N m³	Kg/h	РРМ	mg/N m³	Kg/hr	PPM
		10.05.2022	70	1.9	39	223	11.47	32	2.3	12.2	326	22.94	173.28
1	SRU-57	19-05-2022	70	0.000		0.00.00.00		20	2.6	13.7	310	22.01	154.77
2	SRU-26	19-05-2022	70	1.9	40	245	12.08	36	2.0	13.7	310	22.01	10/11/2
		Perm	rissible Lim	its (mg/Nm³)							350	

Remark:

ND-Below Detection Limit, Oxides of Sulphur (as SO₄)-ND (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with flue Gas Analyser,

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Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.: 202205190160-161 Test Report Date: 28/05/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

		(meter)	(meter)	100000000000000000000000000000000000000					
				(°C)		(m/s)	mg/Nm ³	Kg/hr	PPM
E7	19-05-2022	70	1.9	39	223	11.47	142	9.99	123.95
26	19-05-2022	70	1.9	40	245	12.08	135	9.58	117.84
i	57 26	26 19-05-2022	26 19-05-2022 70	,,	26 19-05-2022 70 1.9 40	26 19-05-2022 70 1.9 40 245	26 19-05-2022 70 1.9 40 245 12.08	26 19-05-2022 70 1.9 40 245 12.08 135	19-05-2022 70 1.9 40 245 12.08 135 9.58

Remark:

ND-Below Detection Limit, Carbon Monoxide (as CO) ND (LOQ-1.0)

Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202206290111-112 Test Report Date: 05/07/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity		gen Sulph (as H ₂ S)	ide
							(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	29-06-2022	70	1.9	31	203	10.14	ND	- 4	-
2	SRU-26	29-06-2022	70	1.9	30	152	8.77	ND		-
		Perr	nissible Lim	its (mg/Nm³)					15	
			Test Me	thod				IS:1	1255 (P-4)

ND-Below Detection Limit, 1 Hydrogen Sulphide (as HzS)-ND [LOQ- 0.1], Sample Analysed within six days from the date of sampling.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Issued to: M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202206290111-112 Test Report Date: 05/07/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By

: Stack Monitoring

Test Report

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter	Stack Diameter (meter)	Ambien t Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity	100.000.000	es of Sulp (as SO _x)	hur	Oxid	(as NO _x)	-
			`)	(2) - (3)	2.5		(m/s)	mg/N m³	Kg/h	РРМ	mg/N m³	Kg/hr	РРМ
1	SRU-57	29.06.2022	70	1.9	39	223	11.47	38	2.5	14.5	301	19.51	159.99
2	SRU-26	29.06.2022	70	1.9	40	245	12.08	32	2.0	12.2	311	19.53	165.30
1841		Perm	issible Lim	its (mg/Nm³)							350	

Remark:

ND-Below Detection Limit, Oxides of Sulphur (as 50x)-ND (LOQ-1.0) Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: M/s Indian Oil Corporation Limited (Refinery Division) Panipat Refinery, Distt. Panipat Haryana, INDIA

Test Report No.: 202206290111-112 Test Report Date: 05/07/2022

Sample Particulars

Nature of the Sample Purpose of Monitoring Method of Sampling Monitoring Conducted By : Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Rishi Pal

Analysis Report

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambie nt Temp.	Stack Temp. (°C)	Average Gas Velocity	Car	(as CO)	ide
			***************************************	hite-veneratio	(°C)	7,758,5	(m/s)	mg/Nm³	Kg/hr	PPM
1	SRU-57	29,06,2022	70	1.9	39	223	11.47	119	7.71	103.88
2	SRU-26	29.06,2022	70	1.9	40	245	12.08	138	8.67	120.46
2.	3KU-20	333000	sible Limits	A for our process	100	F-14.	30000	6722	150	

NO-Relow Detection Limit, Carbon Monoxide (as CO) ND (LOQ-1.0)

Sample Analysed within six days from the date of sampling. All above Parameters are measures with Flue Gas Analyser.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC 636621000002859

(Refinery Division)

Test Report Date:

03/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

25/12/2021

Test Completed

01/01/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

24/12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.58	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	14.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	90	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg,*L	.13	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	3.2	5.0	IS:3025 (P-39)
6	Phenois(C ₆ H ₅ OH)	mg/L	0.27	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.4	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	BDL (LOQ-0.2)	- 40	IS:3025 (P-34)
9	Phosphate	mg/L	0.81	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	BDL (LOQ-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL (LOQ-0,1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L/	0.05	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	BDL (LOQ-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	3.4	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.72	1.0 ₀₀	APHA-23 rd Ed.

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest conce

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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202112240110

(Refinery Division)

Test Report Date:

03/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Sample Quantity & Packaging

: 1.0 Liter, Pet Bottle

Test Started on

: 25/12/2021

Test Completed

01/01/2022

Method of Sampling

: SOP/B/D-3

Date of Sampling

: 24/12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	4.2	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	BDL(LOQ-0.1)	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	BDL(LOQ-0.02)	0.2	APHA-23 rd Ed.

mark:

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a sub: -:nce that can be accurately measured under specified experimental conditions

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Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC 636621000002860

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report Date:

03/01/2022

Sample Particulars

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

25/12/2021

Test Completed

01/01/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

24/12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	-	7.73	6.0-8.5	IS:3025 (P-11)
		/8/8	P/II	000000000000000000000000000000000000000	Security and described a state of the
2	Total Suspended Solids (TSS)	mg/L	16	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	110	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	11	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	1.2	5.0	IS:3025 (P-39)
6	Phenois(C ₆ H ₅ OH)	mg/L	0.22	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.4	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	BDL (LOQ-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.53	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	BDL (LOQ-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL (LOQ-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	0.06	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	BDL (LOQ-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	2.89	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.79	1.0	APHA-23 rd Ed.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202112240111

(Refinery Division)

Test Report Date:

03/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

25/12/2021

Test Completed

01/01/2022

Method of Sampling

: SOP/B/D-3

Date of Sampling

: 2.,12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

ETP-2 O/L (PR)

Test Report

Parameter	Unit	Result	Permissible Limits	Protocol
Ammonia (N)	mg/L	6.2	15.0	15:3025 (P-34)
Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
Vanadium (V)	mg/L	BDL(LOQ-0.1)	0.2	APHA-23 rd Ed.
Benzene	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
Benzo(a)-Pyreen	mg/L	BDL(LOQ-0.02)	0.2	APHA-23 rd Ed.
	Ammonia (N) Cyanide (CN) Total Chromium Vanadium (V) Benzene	Ammonia (N) mg/L Cyanide (CN) mg/L Total Chromium mg/L Vanadium (V) mg/L Benzene mg/L	Ammonia (N) mg/L 6.2 Cyanide (CN) mg/L BDL (LOQ-0.1) Total Chromium mg/L BDL(LOQ-0.05) Vanadium (V) mg/L BDL(LOQ-0.1) Benzene mg/L BDL(LOQ-0.01)	Limits L

Remark

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that con pe accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC 636621000002861

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report Date:

03/01/2022

Sample Particulars

'Sample Quantity & Packaging

1. Liter, Pet Bottle

Test Started on

25/12/2021

Test Completed

01/01/2022

Method of Sampling

SOP/B/D-3

Date of Sampling __.

: 24/12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

: ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.68	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	74	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	190	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	20.0	30	IS:3025 (P-44)
5	Phenois(C ₆ H ₅ OH)	mg/L	0.38	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.6	2.0	IS:3025 (P-29)
7	Fluoride •	mg/L	3.83	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr+5)	mg/L	BDL(LOQ-0.05)	0.1	IS:3025 (P-52)

n.
BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions



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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202112240112

(Refinery Division)

Test Report Date:

03/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

25/12/2021

Test Completed

01/01/2022

.Method of Sampling

SOP/B/D-3

Date of Sampling

: 24/12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB **Test Report**

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC636622000000061

(Refinery Division)

Test Report Date:

20/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

12/01/2022

Test Completed

Method of Sampling

19/01/2022

SGP/B/D-3

Date of Sampling

10/01/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

meter	Unit	Result	Permissible Limits	Protocol
		7.64	6.0-8.5	IS:3025 (P-11)
(TSS)	mg/L	16.0	20.0	IS:3025 (P-17)
and (COD)	mg/L	100	125.0	IS:3025 (P-58)
Demand (3 days at	mg/L	12	15.0	IS:3025 (P-44)
	mg/L	3.8	5.0	IS:3025 (P-39)
	mg/L	0.31	0.35	IS:3025 (P-43)
	mg/L	0.4	0.5	IS:3025 (P-29)
(NH3)	mg/L	BDL (LOQ-0.2)	40	IS:3025 (P-34)
	mg/L	1.20	3.0	IS:3025 (P-34)
(Cr+6)	mg/L	RDL (LOQ-0.05)	0.1	IS:3025 (P-51)
	mg/L	BDL (LOQ-0.1)	1.0	APHA -23 rd Ed.
	mg/L	0.07	0.1	APHA-23 rd Ed.
	mg/L		V	APHA-23 rd Ed.
	534408000			
	(92)	74.W.S.	5.0	APHA-23 rd Ed.
	45	mg/L mg/L	mg/L 3.6 mg/L 0.65	mg/L 3.6 5.0 mg/L 0.65 1.0

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lo

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202201100110

(Refinery Division)

Test Report Date:

20/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

12/01/2022

Test Completed

: 12/01/2022 : 19/01/2022

Method of Sampling

: SOP/B/D-3

Date of Sampling

10/01/2022

Sampling Conducted By

Mr. Rishi Pal

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Sample Description

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	6.4	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	3DL(LOQ-0.1)	0.2	APHA-23 rd Ed.
5 -	Benzene	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	BDL(LOQ-0.02)	0.2	APHA-23 rd Ed.

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BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

ULR No .:

TC636622000000062

Test Report Date:

20/01/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.0 Liter, Pet Bottle

12/01/2022

19/01/2022

SOP/B/D-3

10/01/2022 M. . Rishi Pal

. The Molli Fal

: ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	***	7.84	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	12	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	- 80	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	7.0	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	my, L	1.8	5.0	IS:3025 (P-39)
6	Phenois(C ₅ H ₅ OH)	mg/L	0.21	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.2	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	BDL (LOQ-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.26	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	BDL (LOQ-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL (LOQ-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	0.04	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	BDL (LOQ-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	2.14	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.51	1.0	APHA-23 rd Ed.

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest education and

ry measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202201100111

(Refinery Division)

Test Report Date:

Panipat Refinery, Distt. Panipat

Haryana, INDIA

20/01/2022

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

17'01/2022

Test Completed

19/01/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

10/01/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mş/L	3.4	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	BDL(LOQ-0.1)	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	BDL(LOQ-0.02)	0.2	APHA-23 rd Ed.

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

ULR No.:

TC636622000000063

Test Report Cate:

20/01/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

: Waste Water

1.0 Liter, Pet Bottle

12/01/2022

: 19/01/2022

SOP/B/D-3

10/01/2022

Mr. Rishi Per

: ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	***	7.66	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	72	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	180	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	16.0	30	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.68	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.4	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	3.41	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr+6)	mg/L	BDL(LOQ-0.05)	0.1	IS:3025 (P-52)

BDL-Below Detection Limit, LCQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202201100112

(Refinery Division)

Test Report Date:

Panipat Refinery, Distt. Panipat

Haryana, INDIA

20/01/2022

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

12/01/2022

Test Completed

19/01/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

10/01/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	110L (LOQ-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be apparately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No.:

TC636622000000602

(Refinery Division)

Test Report Date:

04/03/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

24/02/2022

Test Completed

03/03/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

23/02/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.24	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	120 -	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	10	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	3.4	5.0	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.32	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.2	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	BDL (LOQ-0.2)	40	IS:3025 (P-34
9	Phosphate	mg/L	1.41	3.0	IS:3025 (P-31
10	Chromium Hexavalent (Cr+6)	mg/L	BDL (LOQ-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL (LOQ-0.1)	1.0	APHA -23 rd Ed
12	Lead (Pb)	mg/L	0.05	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	BDL (LOQ-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	3.2	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.69	1.0 BORA	APHA-23 rd Ed.

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DL-Below Detection Limit LCQ-Limit of Quantification, the lowest corps, trains, of a substance that can be accurately measured under

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202202230110

(Refinery Division)

Test Report Date:

04/03/2022 .

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

24/02/2022

Test Completed

03/03/2022

SOP/B/D-3

Method of Sampling

Date of Sampling

23/02/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	6.1	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	BDL(LOQ-0.1)	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	BDL(LOQ-0.02)	0.2	APHA-23 rd Ed.

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC636622000000603

(Refinery Division)

Test Report Date:

04/03/2022

Panipat Refinery, Distt. Panipat Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

24/02/2022

Test Completed

03/03/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

23/02/2022

Sampling Conducted By

Sample Description

Mr. Rishi Pal ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.58	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	14	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	90	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	10	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2.6	5.0	IS:3025 (P-39)
6	Phenois(C ₆ H ₅ OH)	mg/L	0.25	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.4	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	BDL (LOQ-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	0.28	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	BDL (LOQ-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL (LOQ-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	0.07	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	BDL (LOQ-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	2.62	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.85	1.0 X AB	APHA-23 rd Ed.

Remark: BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest con-

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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202202230111

(Refinery Division)

Panipat Refinery, Distt. Panipat

Test Report Date:

04/03/2022

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

24/02/2022

Test Completed

03/03/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

23/02/2022

Sampling Conducted By Sample Description

Mr. Rishi Pal ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	4.8	15.0	IS:3025 (P-34)
2	Cyanide (CN)	- mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	BDL(LOQ-0.1)	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	BDL(LOQ-0.02)	0.2	APHA-23 rd Ed.

BDL-Below Detection Limit, LOC-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC636622000000604

(Refinery Division)

Test Report Date:

04/03/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

24/02/2022

Test Completed

03/03/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

23/02/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.85	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	76	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	190	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	18.0	30	IS:3025 (P-44)
5	Phenois(C ₆ H ₅ OH)	mg/L	0.84	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.6	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	3.84	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr+6)	mg/L	BDL(LOQ-0.05)	0.1	IS:3025 (P-52)

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

202202230112

(Refinery Division)

Test Report No.: Test Report Date:

Panipat Refinery, Distt. Panipat

Haryana, INDIA

04/03/2022

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

24/02/2022

Test Completed

03/03/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

23/02/2022

Sampling Conducted By Sample Description

Mr. Rishi Pal

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202203210116

(Refinery Division)

Test Report Date:

30/03/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Wastewater

1.0 Liter, Pet Bottle

22/03/2022

29/03/2022

SOP/B/D-3

21/03/2022

Mr. Rishi Pal

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocoi
		-	7.62	6.0-8.5	IS:3025 (P-11)
1	pH	***	16.0	20.0	IS:3025 (P-17)
2	Total Suspended Solids (TSS)	mg/L	7E-0703	125.0	IS:3025 (P-58)
100	Chemical Oxygen Demand (COD)	mg/L	110	90.00000000	IS:3025 (P-44)
3	Bio-Chemical Oxygen Demand (3 days at	mg/L	12	15.0	15:3023 (1-41)
4	27°C) (BOD)	mg/L	3.6	5.0	IS:3025 (P-39)
5	Oil & Grease (O&G)	0.0000000000000000000000000000000000000	0.31	0.35	IS:3025 (P-43
6	Phenols(C ₆ H ₅ OH)	mg/L	0.4	0.5	IS:3025 (P-29
7	Sulphide (S)	mg/L	1991/97/1	40	IS:3025 (P-34
8	Total Kjeldahl Nitrogen (NH3)	mg/L	BDL (LOQ-0.2)	3.0	IS:3025 (P-31
10.40	Phosphate	mg/L	1.28		
9	Chromium Hexavalent (Cr+6)	mg/L	BDL (LOQ-0.05)	0.1	IS:3025 (P-52
10		mg/L	BDL (LOQ-0.1)	1.0	APHA -23rd Ed
11	Copper (Cu)	mg/L	0.06	0.1	APHA-23rd Ed
12	Lead (Pb)		BDL (LOQ-0.005)	0.01	APHA-23rd Ed
13	Mercury (Hg)	mg/L	20, 3	5.0	APHA-23rd Ed
14	Zinc (Zn)	mg/L	3.8	1.0	APHA-23 rd Ed
15	Nickel (Ni)	mg/L	0.72	1.0	ATTIVES E

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured

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- info@nityalab.com www.nityalab.com

Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202203210116

Test Report Date:

30/03/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.0 Liter, Pet Bottle

: 22/03/2022

: 29/03/2022

SCP/B/D-3

21/03/2022

Mr. Rishi Pal

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
		ma/l	4.8	15.0	IS:3025 (P-34)
1	Ammonia (N)	mg/L			to the same of
2	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
-		mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
3	Total Chromium	10240		0.2	APHA-23 rd Ed.
4	Vanadium (V)	mg/L	BDL(LOQ-0.1)	0.2	DANKETO-AMERICA ASSE
-	Benzene	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
5	Delizerio		BDL(LOQ-0.02)	0.2	APHA-23 rd Ed
6	Benzo(a)-Pyreen	mg/L	BDL(LOQ-0.02)	WHATES	

Remark:
BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division) Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202203210117

Test Report Date:

30/03/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.0 Liter, Pet Bottle

22/03/2022

29/03/2022

SOP/B/D-3

21/03/2022

Mr. Rishi Pal

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
		-	7.62	6.0-8.5	IS:3025 (P-11)
1	pH		12	20.0	IS:3025 (P-17)
2	Total Suspended Solids (TSS)	m g/L	. SATE OF	125.0	IS:3025 (P-58)
3	Chemical Oxygen Demand (COD)	mg/L	100	15.0	IS:3025 (P-44)
4	Bio-Chemical Oxygen Demand (3 days at	mg/L	8.0	15.0	
4	27°C) (BOD)	mg/L	2,4	5.0	IS:3025 (P-39)
5	Oil & Grease (O&G)	mg/L	0.22	0.35	IS:3025 (P-43)
6	PhenoIs(C ₆ H ₅ OH)	The Marie St.	0.4	0.5	IS:3025 (P-29)
7	Sulphide (S)	mg/L	(40	IS:3025 (P-34)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	BDL (LOQ-0.2)	3.0	IS:3025 (P-31
9	Phosphate	mg/L	0.38		IS:3025 (P-52
	Chromium Hexavalent (Cr+5)	mg/L	BDL (LOQ-0.05)	0.1	
10	Gilemanina	mg/L	BDL (LOQ-0.1)	1.0	APHA -23 rd Ed
11	Copper (Cu)	mg/L	0.08	0.1	APHA-23 rd Ed.
12	Lead (Pb)	mg/L	BDL (LOQ-0.005)	0.01	APHA-23 rd Ed
13	Mercury (Hg)	70	2,42	5.0	APHA-23 rd Ed
14	Zinc (Zn)	mg/L	0.66	1.0	APHA-23 rd Ed
15	Nickel (Ni)	mg/L	0.00		andrions

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No .:

202203210117

Test Report Date:

30/03/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.0 Liter, Pet Bottle

22/03/2022

29/03/2022

SOP/B/D-3

21/03/2022

Mr. Rishi Pal

ETP-2 O/L (PR)

Test Report

Parameter	Unit	Result	Permissible Limits	Protocol
Ammonia (N)	mg/L	4.2	15.0	IS:3025 (P-34)
	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52)
	mg/L	BDL(LOQ-0.1)	0.2	APHA-23 rd Ed.
	mg/L	BDL(LOQ-0.01)	0.1	APHA-23 rd Ed.
	mg/L	BDL(LOQ-0.02)	0.2	APHA-23 rd Ed.
	Ammonia (N) Cyanide (CN) Total Chromium	Ammonia (N) mg/L Cyanide (CN) mg/L Total Chromium mg/L Vanadium (V) mg/L Benzene mg/L	Ammonia (N) mg/L 4.2	Ammonia (N) mg/L 4.2 15.0

E BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimen

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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

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info@nityalab.com @ www.nityalab.com

Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202203210118

Test Report Date:

30/03/2022

Hat yand, and

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.0 Liter, Pet Bottle

22/03/2022

: 29/03/2022

SOP/B/D-3

21/03/2022

Mr. Rishi Pal

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocoi
	**		7.64	6.5-8.5	IS:3025 (P-11)
1	pH		7.01	100	IS:3025 (P-17)
2	Total Suspended Solids (TSS)	mg/L		250	IS:3025 (P-58)
3	Chemical Oxygen Demand (COD)	mg/L	180		IS:3025 (P-44)
	Bio-Chemical Oxygen Demand (3 days at	mg/L	14.0	30	1000
4	27°C) (BOD)	mg/L	0.68	<1	IS:3025 (P-43
5	Phenols(C ₆ H ₅ OH)	mg/L	1.2	2.0	IS:3025 (P-29
6	Sulphide (S)		3.14	<5	IS:3025 (P-60
7	Fluoride	mg/L	3.14	782	
80/	(Crt6)	mg/L	BDL(LOQ-0.05)	0.1	IS:3025 (P-52
8	Chromium Hexavalent (Cr+6)	mg/L	BDL(LOQ-0.05)		15.502

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BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental condition

(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

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Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202203210118

Test Report Date:

30/03/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.J Liter, Pet Bottle

22/03/2022

29/03/2022

SOP/B/D-3

21/03/2022

Mr. Rishi Pal

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	BDL (LOQ-0.1)	0.20	APHA-23 rd Ed.
	Total Chromium	mg/L	BDL(LOQ-0.05)	2.0	IS:3025 (P-52

BDL-Below Dataction Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No.:

202204250119

(Refinery Division)

Test Report Date:

30/04/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Wastewater

Sample Quantity & Packaging

Sample Particulars Nature of Sample

1.0 Liter, Pet Bottle

Test Started on

25/04/2022

Test Completed

30/04/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

25/04/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	(4)(4)	7.82	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	14.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	120	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	10	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	3.8	5.0	IS:3025 (P-39)
6	PhenoIs(C ₆ H ₅ OH)	mg/L	0.30	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.40	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.40	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	0.06	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA-23rd Ed.
14	Zinc (Zn)	mg/L	3.4	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.76	1.0	APHA-23rd Ed.

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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■ info@nityalab.com www.nityalab.com

Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No .:

202204250119

(Refinery Division)

Test Report Date:

30/04/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

26/04/2022

Test Completed

30/04/2022

Method of Sampling

SOP/B/D-3

Date of Sampling Sampling Conducted By

25/04/2022 Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	4.1	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52
4	Vanadium (V)	mg/L	ND(DL-0,1)	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	ND(DL-0.02)	0.2	APHA-23 rd Ed.

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No.:

202204250120

(Refinery Division)

Test Report Date:

30/04/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

26/04/2022

Test Completed

30/04/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

25/04/2022

Sampling Conducted By Sample Description

Mr. Rishi Pal

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	рН	***	7.33	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	110	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.0	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2.8	5.0	IS:3025 (P-39)
6	PhenoIs(C ₆ H ₅ OH)	mg/L	0.28	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.4	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.2	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	0.06	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	2.42	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.68	1.0	APHA-23rd Ed.

NO-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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(RAVINDER MITTAL)

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Test Report

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No .:

202204250120

(Refinery Division)

Test Report Date:

30/04/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

26/04/2022

Test Completed

30/04/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

25/04/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	6.8	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA-23™ Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	ND(DL-0.02)	0.2	APHA-23 rd Ed.

ND-Bolow Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202204250121

(Refinery Division)

Test Report Date:

30/04/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

26/04/2022

Test Completed

30/04/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

25/04/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	***	7.82	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	76.0	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	190	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	16.0	30	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.64	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.8	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	3.24	<5	IS:3025 (P-60)
- 8	Chromium Hexavalent (Cr+6)	mg/L	ND(DL-0.05)	0.1	IS:3025 (P-52)

ND-Below Detection Limit, DL-Umit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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(RAVINDER MITTAL)

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No .:

202204250121

(Refinery Division)

Test Report Date:

30/04/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

26/04/2022

Test Completed

30/04/2022 SOP/B/D-3

Method of Sampling

Date of Sampling Sampling Conducted By

25/04/2022 Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)

Remark: ND-Below Detection Limit; DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No .:

202205270121

(Refinery Division)

Test Report Date:

04/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Wastewater

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

28/05/2022

Test Completed

03/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

27/05/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	***	7.24	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	110	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	4.0	5.0	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.32	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.20	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.66	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed
12	Lead (Pb)	mg/L	0.08	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	3.6	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.82	1.0	APHA-23 rd Ed.
				0	

peched experimental conditions. ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under

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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

M/s Indian Oil Corporation Limited **Issued To**

Test Report No .:

Test Report

202205270121

(Refinery Division)

Panipat Refinery, Distt. Panipat

Test Report Date:

04/06/2022

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

28/05/2022

Test Completed

03/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

27/05/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Parameter	Unit	Result	Permissible Limits	Protocol
Ammonia (N)	mg/L	8.2	15.0	IS:3025 (P-34)
Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA-23 rd Ed.
Benzene	mg/L	ND(DL-0.01)	0.1	APHA-23 rd Ed.
Benzo(a)-Pyreen	mg/L	ND(DL-0.02)	0.2	APHA-23 rd Ed.
	Ammonia (N) Cyanide (CN) Total Chromium Vanadium (V) Benzene	Ammonia (N) mg/L Cyanide (CN) mg/L Total Chromium mg/L Vanadium (V) mg/L Benzene mg/L	Ammonia (N) mg/L 8.2 Cyanide (CN) mg/L ND (DL-0.1) Total Chromium mg/L ND(DL-0.05) Vanadium (V) mg/L ND(DL-0.1) Benzene mg/L ND(DL-0.01)	Ammonia (N) mg/L 8.2 15.0

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No .:

202205270122

(Refinery Division)

Test Report Date:

04/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

28/05/2022

Test Completed

03/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

27/05/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	PH	***	7.46	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	100	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	10.0	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2.4	5.0	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.24	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.2	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.8	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	0.08	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	2.42	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.42	1.0	APHA-23 rd Ed.

Remark
ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202205270122

(Refinery Division)

Test Report Date:

04/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

: 1.0 Liter, Pet Bottle

Test Started on

28/05/2022

Test Completed

03/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

27/05/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

: ETP-2 O/L (PR)

Test Report

Parameter	Unit	Result	Permissible Limits	Protocol
Ammonia (N)	mg/L	10.2	15.0	IS:3025 (P-34)
Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA-23 rd Ed.
Benzene	mg/L	ND(DL-0.01)	0.1	APHA-23 rd Ed.
Benzo(a)-Pyreen	mg/L	ND(DL-0.02)	0.2	APHA-23 rd Ed.
	Ammonia (N) Cyanide (CN) Total Chromium Vanadium (V) Benzene	Ammonia (N) mg/L Cyanide (CN) mg/L Total Chromium mg/L Vanadium (V) mg/L Benzene mg/L	Ammonia (N) mg/L 10.2 Cyanide (CN) mg/L ND (DL-0.1) Total Chromium mg/L ND(DL-0.05) Vanadium (V) mg/L ND(DL-0.1) Benzene mg/L ND(DL-0.01)	Limits L

Remark: ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No .:

202205270123

(Refinery Division)

Test Report Date:

04/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

28/05/2022

Test Completed

03/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

27/05/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.48	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	84.0	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	210	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	20.0	30	IS:3025 (P-44)
5	Phenois(C ₆ H ₅ OH)	mg/L	0.84	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.6	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	3.4	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr+6)	mg/L	ND(DL-0.05)	0.1	IS:3025 (P-52)

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202205270123

(Refinery Division)

Test Report Date:

04/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

28/05/2022

Test Completed

03/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

27/05/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

M/s Indian Oil Corporation Limited Issued To

Test Report No.:

202206150111

(Refinery Division)

Test Report Date:

24/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Wastewater

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

16/06/2022

Test Completed

23/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		7.42	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	14.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	100	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	10	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	4.2	5.0	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.30	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.40	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.82	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	0.06	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	3.2	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.64	1.0	APHA-23 rd Ed.

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under afied experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202206150111

(Refinery Division)

Panipat Refinery, Distt. Panipat

Test Report Date:

24/06/2022

Haryana, INDIA

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

16/06/2022

Test Completed

23/06/2022

Method of Sampling

Sample Particulars

Nature of Sample

SOP/B/D-3

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-1 O/L (PR)

Test Report

Parameter	Unit	Result	Permissible Limits	Protocol
Ammonia (N)	mg/L	4.2	15.0	IS:3025 (P-34)
Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA-23 rd Ed.
Benzene	mg/L	ND(DL-0.01)	0.1	APHA-23 rd Ed.
Benzo(a)-Pyreen	mg/L	ND(DL-0.02)	0.2	APHA-23 rd Ed.
	Ammonia (N) Cyanide (CN) Total Chromium Vanadium (V) Benzene	Ammonia (N) mg/L Cyanide (CN) mg/L Total Chromium mg/L Vanadium (V) mg/L Benzene mg/L	Ammonia (N) mg/L 4.2 Cyanide (CN) mg/L ND (DL-0.1) Total Chromium mg/L ND(DL-0.05) Vanadium (V) mg/L ND(DL-0.1) Benzene mg/L ND(DL-0.01)	Limits L

Remark:
ND-Below Detection Limit, DL-Limit of Quantification, the fowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No .:

202206150112

(Refinery Division)

Test Report Date:

24/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Waste Water

Sample Particulars Nature of Sample

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on Test Completed 16/06/2022 23/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	***	7.16	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	110	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.0	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	2.8	5.0	IS:3025 (P-39)
6	Phenois(C ₆ H ₅ OH)	mg/L	0.32	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.2	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	ND (DL-0.2)	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.2	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr+6)	mg/L	ND (DL-0.05)	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	ND (DL-0.1)	1.0	APHA -23 rd Ed.
12	Lead (Pb)	mg/L	0.05	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	ND (DL-0.005)	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	2.60	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	0.34	1.0	APHA-23 rd Ed.

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Test Report No.:

202206150112

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report Date:

24/06/2022

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

16/06/2022

Test Completed

23/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-2 O/L (PR)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Ammonia (N)	mg/L	8.4	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	ND(DL-0.1)	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	ND(DL-0.01)	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyreen	mg/L	ND(DL-0.02)	0.2	APHA-23 rd Ed.

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202206150113

(Refinery Division)

Panipat Refinery, Distt. Panipat

Test Report Date:

24/06/2022

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

16/06/2022

Test Completed

23/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	.,,	6.82	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	80.0	100	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	220	250	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	22.0	30	IS:3025 (P-44)
5	Phenols(C ₆ H ₅ OH)	mg/L	0.76	<1	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.4	2.0	IS:3025 (P-29)
7	Fluoride	mg/L	3.2	<5	IS:3025 (P-60)
8	Chromium Hexavalent (Cr+6)	mg/L	ND(DL-0.05)	0.1	IS:3025 (P-52)

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Issued To

M/s Indian Oil Corporation Limited

Test Report No .:

Test Report

202206150113

(Refinery Division)

Test Report Date:

24/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

16/06/2022

Test Completed

23/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

ETP-3 (PTA-ETP)

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Cyanide (CN)	mg/L	ND (DL-0.1)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	ND(DL-0.05)	2.0	IS:3025 (P-52)

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental concisions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

ULR No .:

TC 636621000003008

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report Date:

07/01/2022

Sample Particulars

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

01/01/2022

Test Completed

06/01/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

31/12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		6.53	5.5-9.0	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	46.0	50.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	6.0	10.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	1.4	-	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.12		IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.8	-	IS:3025 (P-29)
8	Odour	18.	Agreeable	-	IS:3025 (P-5)
9	Total Residual Free Chlorine	mg/L	1.8	-	IS:3025 (P-26)
10	Phosphate	mg/L	0.52		IS:3025 (P-31)
11	Electrical Conductivity	us/cm	721		IS:3025 (P-14)
12	Ammonical Nitrogen	mg/L	3.24	-	IS:3025 (P-34)
13	MLSS	mg/L	17.0	178	APHA 23rd

c:
BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experi



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202112310110

(Refinery Division)

Test Report Date:

07/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Sample Quantity & Packaging

: 1.0 Liter, Pet Bottle

Test Started on

01/01/2022

Test Completed

: 06/01/2022

Method of Sampling

: SUP/B/D-3

Date of Sampling

: 31/12/2021

Sampling Conducted By

: Mr. Rishi Pal

Place of Sampling .

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Colour	Hazen	<5		IS:3025 (P-4)
2	Total Nitrogen	mg/L	7.4	10	IS:3025 (P-34)
3	Sodium Adsorption Ratio		4.2	-	In House NL/SOP/W&WW/52
4	Fluoride as F	mg/L	2.84	-	IS:3025 (P-60)
5.	Residual Sodium Carbonate (RSC)	mg/L	1.2	-	IS 11624

amark.

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202112310110

(Refinery Division)

Test Report Date:

07/01/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

01/01/2022

Test Completed

06/01/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

31/12/2021

Sampling Conducted By

Mr. Rishi Pal

Place of Sampling

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Feacal Coliform	No./100 ml	Less than 2	Less than 100	IS 1622

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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RHYTHM BASSON

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

ULR No .:

TC636622000000341

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report Date:

08/02/2022

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

31/01/2022

Test Completed

07/02/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

29/01/2022

Sampling Conducted By

Mr. Rishi Pal

STP-O/L Township

Sample Description

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	•••	6.61	5.5-9.0	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mç/L	17.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	42.0	50.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	4.0	10.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	1.2	-	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.18		IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.6	-	IS:3025 (P-29)
8	Odour		Agreeable		IS:3025 (P-5)
9	Total Residual Free Chlorine	mg/L	2.4	-	IS:3025 (P-26)
10	Phosphate	mg/L	0.42	=	IS:3025 (P-31)
11	Electrical Conductivity	us/çm	846		IS:3025 (P-14)
12	Ammonical Nitrogen	mg/L	3.12	-	IS:3025 (P-34)
13	MLSS	mg/L	18.0	-	APHA 23rd
14					



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202201290118

(Refinery Division)

Test Report Date:

08/02/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

: Waste Water

Sample Quantity & Packaging

: 1.0 Liter, Pet Bottle

Test Started on

31/01/2022

Test Completed

07/02/2022

Method of Sampling

: SOP/B/D-3

Date of Sampling

: 29/01/2022

Sampling Conducted By

: Mr. Rishi Pal

Sample Description

: STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Colour	Hazen	<5	-	IS:3025 (P-4)
2	Total Nitrogen	mg/L	6.2	10	IS:3025 (P-34)
3	Sodium Adsorption Ratio	(.e)	4.8	*	In House NL/SOP/W&WW/52
4	Fluoride as F	mg/L	2.66	100	IS:3025 (P-60)
5.	Residual Sodium Carbonate (RSC)	mg/L	1.4	-	IS 11624
6.	Feacal Coliform	No./100 ml	Less than 2	Less than 100	IS 1622

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

(AUTHORISED SIGNATORY)

(RHYTHM BASSON)

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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info@nityalab.com www.nityalab.com

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

ULR No .:

TC636622000000607

Test Report Date:

04/03/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.0 Liter, Pet Bottle

24/02/2022

03/03/2022

SOP/B/D-3

23/02/2022

Mr. Rishi Pal

STP-O/L Township

Test Report

Parameter	Unit	Result	Permissible Limits	Protocol
pH	***	6.72	5.5-9.0	IS:3025 (P-11)
Total Suspended Solids (TSS)	mg/L	14.8	20.0	IS:3025 (P-17)
Chemical Oxygen Demand (COD)	mg/L	46.0	50.0	IS:3025 (P-58)
Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	6.0	10.0	IS:3025 (P-44)
Oil & Grease (O&G)	mg/L	1.8	(8)	IS:3025 (P-39)
Phenols(C ₆ H ₅ OH)	mg/L	0.22	-	IS:3025 (P-43)
Sulphide (S)	mg/L	0.8	147	IS:3025 (P-29)
Odour		Agreeable		1S:3025 (P-5)
Total Residual Free Chlorine	mg/L	3.8	-	IS:3025 (P-26)
Phosphate	mg/L	0.84	54	IS:3025 (P-31)
Electrical Conductivity	us/cm	882	1.5	IS:3025 (P-14)
Ammonical Nitrogen	mg/L	3.46		IS:3025 (P-34)
MLSS	mg/L	14.0		APHA 23rd
1 10000000				
	pH Total Suspended Solids (TSS) Chemical Oxygen Demand (COD) Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD) Oil & Grease (O&G) Phenols(C ₆ H ₅ OH) Sulphide (S) Odour Total Residual Free Chlorine Phosphate Electrical Conductivity Ammonical Nitrogen	pH Total Suspended Solids (TSS) mg/L Chemical Oxygen Demand (COD) mg/L Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD) Oil & Grease (O&G) mg/L Phenols(C ₆ H ₅ OH) mg/L Sulphide (S) mg/L Odour - mg/L Total Residual Free Chlorine mg/L Phosphate mg/L Electrical Conductivity us/cm Ammonical Nitrogen mg/L	pH 6.72 Total Suspended Solids (TSS) mg/L 14.8 Chemical Oxygen Demand (COD) mg/L 46.0 Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD) Oil & Grease (O&G) mg/L 1.8 Phenols(CeH5OH) mg/L 0.22 Sulphide (S) mg/L 0.8 Odour - Agreeable Total Residual Free Chlorine mg/L 3.8 Phosphate mg/L 0.84 Electrical Conductivity us/cm 882 Ammonical Nitrogen mg/L 3.46	Limits

BDL-Below Detection Limit, LOD-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specific



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(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No .:

202202230116

(Refinery Division)

Test Report Date:

04/03/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

24/02/2022

Test Completed

03/03/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

23/02/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Colour	Hazen	<5	5#s	IS:3025 (P-4)
2	Total Nitrogen	mg/L	8.6	10	IS:3025 (P-34)
3	Sodium Adsorption Ratio	ε	6.9		In House NL/SOP/W&WW/52
4	Fluoride as F	mg/L	2.42	-	IS:3025 (P-60)
5.	Residual Sodium Carbonate (RSC)	mg/L	1.2	-	IS 11624
6.	Feacal Coliform	No./100 ml	Less than 2	Less than 100	IS 1622

BDL-Below Detection Limit, LOO-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

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Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202203280120

(Refinery Division)

Test Report Date:

05/04/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

29/03/2022

Test Completed

04/04/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

28/03/2022 M Rishi Pal

Sampling Conducted By

Sample Description

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		6.83	5.5-9.0	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	44.0	50.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	3.4	10.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	1.6	-	IS:3025 (P-39)
6	Phenois(C ₆ H ₅ OH)	mg/L	0.32	=	IS:3025 (P-43)
7	Sulphide (S)	mg/L	1.2	F	IS:3025 (P-29)
8	Odour	/ <u>~</u>	Agreeable	-	IS:3025 (P-5)
9	Total Residual Free Chlorine	mg/L	4.2	-	IS:3025 (P-26)
10	Phosphate	mg/L	0.68	-	IS:3025 (P-31)
11	Electrical Conductivity	us/cm	1028	-	IS:3025 (P-14)
12	Ammonical Nitrogen	mg/L	3.24	-	IS:3025 (P-34)
13	MLSS	mg/L	18.0	-	APHA 23rd
14					

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued To

M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Test Report No.:

202203280120

Test Report Date:

05/04/2022

Sample Particulars

Nature of Sample

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Sample Description

Waste Water

1.0 Liter, Pet Bottle

29/03/2022

04/04/2022

SOP/B/D-3

28/03/2022

Mr. Rishi Pal

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Colour	Hazen	<5	-	IS:3025 (P-4)
2	Total Nitrogen	mg/L	6.8	10	IS:3025 (P-34)
3	Sodium Adsorption Ratio		6.2	-	In House NL/SOP/W&WW/52
4	Fluoride as F	mg/L	2.1	-	IS:3025 (P-60)
5.	Residual Sodium Carbonate (RSC)	mg/L	1.4	* .	IS 11624
6.	Feacal Coliform	No./100 ml	Less than 2	Less than 100	IS 1622

BDL-Below Detection Limit, LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No .:

202204300149

(Refinery Division)

Test Report Date:

09/05/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

02/05/2022

Test Completed

07/05/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

30/04/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	***	6.43	5.5-9.0	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	12.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	40.0	50.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	3.2	10.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	1.8	-	IS:3025 (P-39)
6	PhenoIs(C ₆ H ₅ OH)	mg/L	0.38	-	IS:3025 (P-43)
7	Sulphide (S)	mg/L	1.6	-	IS:3025 (P-29)
8	Odour	-	Agreeable	-	IS:3025 (P-5)
9	Total Residual Free Chlorine	mg/L	6.2	-	IS:3025 (P-26)
10	Phosphate	mg/L	0.42	2	IS:3025 (P-31)
11	Electrical Conductivity	us/cm	1186	-	IS:3025 (P-14)
12	Ammonical Nitrogen	mg/L	3.82	-	IS:3025 (P-34)
13	MLSS	mg/L	14.0	-	APHA 23rd

Remark:

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued To

M/s Indian Oil Corporation Limited

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report No .:

202204300149

(Refinery Division)

Test Report Date:

09/05/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

02/05/2022

Test Completed

07/05/2022 SOP/B/D-3

Method of Sampling

Date of Sampling Sampling Conducted By

30/04/2022 Mr. Rishi Pal

Sample Description

: STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Colour	Hazen	<5	-	IS:3025 (P-4)
2	Total Nitrogen	mg/L	8.2	10	IS:3025 (P-34)
3	Sodium Adsorption Ratio		6.0	-	In House NL/SOP/W&WW/52
4	Fluoride as F	mg/L	2.6	-	IS:3025 (P-60)
5.	Residual Sodium Carbonate (RSC)	mg/L	1.2	-	IS 11624
6.	Feacal Coliform	No./100 ml	Less than 2	Less than	IS 1622

Remark.

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

Test Report

202205280110

(Refinery Division)

Test Report Date:

04/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Date:

04/06/2022

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

: 1.0 Liter, Pet Bottle

Test Started on

29/05/2022

Test Completed

03/06/2022

Method of Sampling

: SOP/B/D-3

Date of Sampling

: 28/05/2022

Sampling Conducted By

: Mr. Rishi Pal

Sample Description

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH		6.46	5.5-9.0	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	44.0	50.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	4.2	10.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	1.4	-	IS:3025 (P-39)
6	Phenols(C ₆ H ₅ OH)	mg/L	0.82	141	IS:3025 (P-43)
7	Sulphide (S)	mg/L	1.6	;=2X	IS:3025 (P-29)
8	Odour	•	Agreeable	-	IS:3025 (P-5)
9	Total Residual Free Chlorine	mg/L	6.8		IS:3025 (P-26)
10	Phosphate	mg/L	0.82	360	IS:3025 (P-31)
11	Electrical Conductivity	us/cm	1194	-	IS:3025 (P-14)
12	Ammonical Nitrogen	mg/L	4.16	•	IS:3025 (P-34
13	MLSS	mg/L	16.0		APHA 23rd

Remark:

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No .:

202205280110

(Refinery Division)

Test Report Date:

04/06/2022

Panipat Refinery, Distt. Panipat

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

29/05/2022

Test Completed

03/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

28/05/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Colour	Hazen	<5	-	IS:3025 (P-4)
2	Total Nitrogen	mg/L	8.6	10	IS:3025 (P-34)
3	Sodium Adsorption Ratio	-	4.0		In House NL/SOP/W&WW/52
4	Fluoride as F	mg/L	2.8		IS:3025 (P-60)
5.	Residual Sodium Carbonate (RSC)	mg/L	1.6	-	IS 11624
6.	Feacal Coliform	No./100 ml	Less than 2	Less than	IS 1622

Remark:

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB **Test Report**

Issued To

M/s Indian Oil Corporation Limited

202206150117

(Refinery Division)

Test Report No.: Test Report Date:

Panipat Refinery, Distt. Panipat

Haryana, INDIA

24/06/2022

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

16/06/2022

Test Completed

23/06/2022

Method of Sampling

SOP/B/D-3

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	pH	***	6.58	5.5-9.0	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	12.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	42.0	50.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	4.0	10.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	1.8	-	IS:3025 (P-39)
6	PhenoIs(C ₆ H ₅ OH)	mg/L	0.86		IS:3025 (P-43)
7	Sulphide (S)	mg/L	1.2	-	IS:3025 (P-29)
8	Odour	#	Agreeable	-	IS:3025 (P-5)
9	Total Residual Free Chlorine	mg/L	6.4	1981	IS:3025 (P-26)
10	Phosphate	mg/L	0.62		IS:3025 (P-31)
11	Electrical Conductivity	us/cm	1182		IS:3025 (P-14)
12	Ammonical Nitrogen	mg/L	4.26		IS:3025 (P-34)
13	MLSS	mg/L	10.0		APHA 23rd

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

NOTE: The laboratory accepts the responsibility for content of report. The results contained in this test report related only to the sample tested. Test report shall not be reproduced except in full, without written approval of the laboratory. This report is intended only for your guidance and not for legal purpose or for advertisement. This report shall not be reproduced except in full without the written approval of this organization. Samples will be destroyed after 30 days from the date of issue of this report. That is lability of Natya Laboratories is limited invisced amount only.

If you have any complaint/feedback regarding the sample collection/testing/test report, please send an email at info@nityaleb.com and call at +91-191-2465597, +91-9873924093

CORPORATE OFFICE & CENTRAL LABORATORIES :-

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

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♥ 43, Sector-A1 Ext., Bhalla Enclave, Channi Himmat, Jammu-180 015, J&K (UT), India

+91-191-2465597

info@nityalab.com @www.nityalab.com

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued To

M/s Indian Oil Corporation Limited

Test Report No.:

202206150116

(Refinery Division)

Panipat Refinery, Distt. Panipat

Test Report Date:

24/05/2022

Haryana, INDIA

Sample Particulars

Nature of Sample

Waste Water

Sample Quantity & Packaging

1.0 Liter, Pet Bottle

Test Started on

16/06/2022

Test Completed

23/06/2022

Method of Sampling

SOP/B/D-3 :

Date of Sampling

15/06/2022

Sampling Conducted By

Mr. Rishi Pal

Sample Description

STP-O/L Township

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
1	Colour	Hazen	<5		IS:3025 (P-4)
2	Total Nitrogen	mg/L	8.2	10	IS:3025 (P-34)
3	Sodium Adsorption Ratio	+	6.0	-	In House NL/SOP/W&WW/52
4	Fluoride as F	mg/L	2.6	ž.	IS:3025 (P-60)
5.	Residual Sodium Carbonate (RSC)	mg/L	1.2	-	IS 11624
6.	Feacal Coliform	No./100 ml	Less than 2	Less than	IS 1622

Remark.

ND-Below Detection Limit, DL-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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labsnitya@gmail.com



LDAR Monitoring Report for IOCL, Panipat

Name of client

M/s Indian Oil Corporation Limited

P.O. Panipat Refinery

Panipat-132 140

HARYANA

Name of Contractor

NETEL (INDIA) LIMITED

Environment Management Services

W-408, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job

LDAR Monitoring Report for IOCL, Panipat

Report Period

Month ofOctober to December, 2021.

FOR NETEL (INDIA) TIMETED

JAYANT MESHRAM

SR.MANAGER - EMS OPREATION

LDAR VOC MONITORING REPORT FOR IOCL, PANIPAT



LEAK DETECTION AND REPAIR (LDAR) PROGRAM VOC REPORT MONTH OF OCTOBER TO DECEMBER, 2021.

PLANTWISE SUMMARY

Sr.No.	Name of the Unit	Date of Monitoring	Total No of Points Monitored	Page No.	No. of Points Where leaks found beyond standard limits	Total Leak (kg/day)
1	HGU (PR)	15/11/2021	124	1 to 4	3	2.120
2	онси	15/11/2021	287	5 to 13	4	1.968
3	AVU-I	15/11/2021	438	14 to 27	3	1.822
4	DHDS	16/11/2021	269	27 to 36	1	0.734
5	RFCC	16/11/2021	251	36 to 44	4	2.609
6	CCRU	16/11/2021	191	44 to 50	2	1,400
7	AVU-II	17/11/2021	300	50 to 59	1	0.662
8	DHDT	17/11/2021	263	59 to 67	1	0.838
9	HGU(76&77)	17/11/2021	245	67 to 75	4	2.541
10	HCU	17/11/2021	394	75 to 87	2	1.569
11	MSQ	18/11/2021	225	87 to 94	4	2.520
12	HGU (BS-6)	18/11/2021	85	94 to 97	2	1.228
13	DHDT (BS-6)	18/11/2021	429	97 to 110	3	2.073
14	DCU	20/11/2021	333	110 to 120	0	0.110
15	ETP-1	20/11/2021	57	120 to 122	0	0.007
16	ETP-2	20/11/2021	58	122 to 124	0	0.008
17	OM&S	20/11/2021	477	124 to 139	6	4.133
18	SRU-NEW	22/11/2021	58	139 to 140	0	0.006
19	SRU-(BS-6)	22/11/2021	30	140 to 143	0	0.014
otal in	Kg/day		4514		40	26.36
otal in	MT/Annum					9.622

Verified by

Surekha Jamdar Dy. Technical Manager Checked by

Shraddha Kere Technical Manager



LDAR Benzene Monitoring Report for IOCL, Panipat

Name of client M/s Indian Ol

M/s Indian Oli Corporation Limited

P.O. Panipat Refinery

Panipat-132 140

HARYANA

Name of

NETEL (INDIA) LIMITED

Contractor

Environment Management Services

W-408, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job

LDAR Monitoring Report for IOCL , Panipat

Report Period

Month of October to December, 2021

For NETEL (INDIA) LIMITED

Jayant Meshram

Sr.Manager-EMS Operation



LDAR BENZENE MONITORING REPORT FOR IOCL, PANIPAT

LEAK DETECTION AND REPAIR (LDAR) PROGRAM BENZENE QUARTERLY REPORT : OCTOBER TO DECEMBER, 2021.

PLANTWISE SUMMARY

Sr.No.	Name of the Unit	Date of Monitoring	Total No of Points Monitored	Page No.	No. of Points Where leaks found beyond standard limits	Total Leak (kg/day)
1	CCRU	16/11/2021	230	1 to 7	0	0.056
2	MSQ	18/11/2021	32	7 to 8	0	0.019
otal in K	g/day					0.075
otal in N	1T/Annum					0.027

Verified by

Surekha Jamdar Dy.Technical Manager Checked by

Shraddha Kere Technical Manager

Report for the month of October to December,2021.



LDAR Monitoring Report for IOCL PX-PTA, Panipat

Name of client

M/s Indian Oli Corporation Limited

P.O. Panipat Refinery Panipat-132 140

HARYANA

Name of Contractor

NETEL (INDIA) LIMITED

Environment Management Services

W-408, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job

LDAR Monitoring Report for IOCL PX-PTA, Panipat

Report Period

Months of October to December, 2021

FOR NETEL (INDIA) LIMITED

Jayant Meshram

Sr.Manager - EMS Operation

Report for the period from October to December, 2021.



LEAK DETECTION AND REPAIR (LDAR) PROGRAM VOC QUARTERLY REPORT : OCTOBER TO DECEMBER, 2021.

PLANTWISE SUMMARY

Sr.No.	Name of the Unit	Date of Monitoring	Total No of Points Monitored	Page No.	No. of Points Where leaks found beyond standard limits	Total Leak (kg/day)
1	PX-I	22/11/2021	260	1 to 9	6	0.103
2	PX-II	22/11/2021	257	9 to 17	0	0.110
2	PTA	23/11/2021	200	17 to 23	0	0.053
3	PTA-ETP	23/11/2021	45	23 to 24	0	0.044
Total in	Kg/day		762		6	0.310
Toatl in	MT/Annum					0.113

Verified by

Surekha Jamdar Dy. Technical Manager Checked by

Shraddha Kere Technical Manager

Report for the period from October to December, 2021.



LDAR Benzene Monitoring Report for IOCL, Panipat

Name of client

M/s Indian Oli Corporation Limited

P.O. Panipat Refinery

Panipat-132 140

HARYANA

Name of Contractor

NETEL (INDIA) LIMITED

Environment Management Services W-408, Pipe line Road, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job

LDAR Monitoring Report for IOCL, Panipat

Report Period

Month of October to December, 2021

For NETEL (INDIA) LIMITED

JAYANT MESHRAM

SR.MANAGER - EMS OPREATION



LEAK DETECTION AND REPAIR (LDAR) PROGRAM BENZENE QUARTERLY REPORT : OCTOBER TO DECEMBER,2021

PLANTWISE SUMMARY

Sr.No.	Name of the Unit	Date of Monitoring	Total No of Points Monitored	Page No.	No. of Points Where leaks found beyond standard limits	Total Leal (kg/day)
1	PX-1	22/11/2021	198	7 to 11	o	0.042
2	PX-2	22/11/2021	80	11 to 13	o	0.008
3	РТА	23/11/2021	64	13 to 15	0	0.015
To	otal in Kg/day		342		0	0.065
Tota	l in MT/Annum					0.024

Verified by

Surekha Jamdar Dy.Technical Manager Checked by

Shraddha Kere Technical Manager



LDAR (VOC) Monitoring Report for IOCL, Panipat Refinery

Name of client

M/s Indian Oil Corporation Limited

P.O. Panipat Refinery

Panipat-132 140

HARYANA

Name of Contractor

NETEL (INDIA) LIMITED

Environment Management Services

W-408, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job

LDAR (VOC) Monitoring Report for IOCL, Panipat

Report Period

3 Months of January 2022 to March, 2022.

For NETEL (INDIA) LIMITED

0



ANIL SHELKE GENERAL MANAGER - EMS

Report for the month of January 2022 to March 2022.



LEAK DETECTION AND REPAIR (LDAR) PROGRAM VOC QUARTERLY REPORT: From JANUARY 2022 TO MARCH 2022

PLANTWISE SUMMARY

Sr.No.	Name of the Unit	Date of Monitoring	Total No of Points Monitored	Page No.	No. of Points Where leaks found beyond standard limits	Total Leak (kg/day)
1	HGU (PR)	21/03/2022	124	1 to 4	4	1.377
6	AVU-I	21/03/2022	438	5 to 18	3	1.737
2	онси	21/03/2022	287	18 to 27	5	2.540
4	DHDS	22/03/2022	269	27 to 35	2	0.785
5	RFCC	22/03/2022	251	35 to 44	4	1.688
6	CCRU	22/03/2022	191	44 to 50	5	2.975
7	AVU-II	23/03/2022	300	50 to 59	4	1.876
9	HGU(76&77)	23/03/2022	245	59 to 67	2	0.972
10	нси	23/03/2022	394	67 to 79	3	1.139
11	MSQ	23/03/2022	225	79 to 86	2	1.248
12	HGU (BS-6)	24/03/2022	85	86 to 89	0	0.006
13	DHDT (BS-6)	24/03/2022	429	89 to 102	1	0.313
14	DCU	24/03/2022	333	102 to 113	3	1.271
15	ETP-1	24/03/2022	57	113 to 114	0	0.008
16	ETP-2	24/03/2022	58	114 to 116	0	0.016
18	SRU-NEW	25/03/2022	58	116 to 118	0	0.028
19	SRU-(BS-6)	25/03/2022	30	118 to 119	0	0.003
17	OM&S	26/03/2022	450	119 to 128	5	2.118
Total i	in Kg/day		4224		43	20.10
	in MT/Annum			312		7.337

Verified by

Surekha Jamdar Technical Manager Checked by

Shraddha Kere Quality Manager

Report for the month of January 2022 to March, 2022.



LDAR (Benzene) Monitoring Report for IOCL, Panipat Refinery

Name of client M/s Indian Oli Corporation Limited

P.O. Panipat Refinery

Panipat-132 140

HARYANA

Name of

NETEL (INDIA) LIMITED

Contractor

Environment Management Services

W-408, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job

LDAR (Benzene) Monitoring Report for IOCL, Panipat Refinery

Report Period

3 Months from January 2022 to March, 2022

For NETEL (INDIA) LIMITED



ANIL SHELKE GENERAL MANAGER-EMS

Report for the Month of January 2022 to March, 2022.



LEAK DETECTION AND REPAIR (LDAR) PROGRAM

BENZENE QUARTERLY REPORT : From JANUARY 2022 TO MARCH 2022

Sr.No.	Name of the Unit	Date of Monitoring	Total No	Page No.	No. of Points	Total Leak
			of Points Monitored		Where leaks found beyond standard limits	(kg/day)
1	CCRU	22/03/2022	230	1 to 7	0	0.041
2	MSQ	23/03/2022	32	7 to 8	0	0.010
Total in F						0.051
Total in I	MT/Annum					0.019

Verified by

Surekha Jamdar Technical Manager Checked by

Shraddha Kere Quality Manager



LDAR (VOC) Monitoring Report for IOCL PX-PTA, Panipat Refinery

Name of client

M/s Indian Oli Corporation Limited

P.O. Panipat Refinery Panipat-132 140

HARYANA

Name of Contractor

NETEL (INDIA) LIMITED

Environment Management Services

W-408, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job

LDAR (VOC) Monitoring Report for IOCL PX-PTA, Panipat Refinery

Report Period

3 Month from January 2022 to March 2022

For NETEL (INDIA) LIMITED

ANIL SHELKE
GENERAL MANAGER-EMS

Report for the month of January 2022 to March 2022.



LEAK DETECTION AND REPAIR (LDAR) PROGRAM VOC QUARTERLY REPORT FROM JANUARY 2022 TO MARCH,2022

PLANTWISE SUMMARY

Sr.No.	Name of the Unit	Date of Monitoring	Total No of Points Monitored	Page No.	No. of Points Where leaks found beyond standard limits	Total Leak (kg/day)
1	PX-I	25/03/2022	260	1 to 9	4	2.449
2	PX-II	25/03/2022	257	9 to 17	0	0.628
2	PTA	26/03/2022	200	17 to 23	1	0.036
3	PTA-ETP	26/03/2022	45	23 to 24	0	0.017
Total in	Kg/day		762		5	3.130
oatl in	MT/Annum		A-525.			1.142

Verified by

Surekha Jamdar Technical Manager ALC COLUMN ALC COLUMN ACCOUNTS AND ACCOUNTS

Checked by

Shraddha Kere Quality Manager



LDAR Benzene Monitoring Report for IOCL, PX- PTA Panipat Refinery

Name of client M/s Indian Oli Corporation Limited

P.O. Panipat Refinery Panipat-132 140

HARYANA

Name of Contractor NETEL (INDIA) LIMITED

Environment Management Services W-408, Pipe line Road, Rabale MIDC,

TTC Industrial Area, Navi Mumbai - 400 701

Nature of job LDAR (Benzene) Monitoring Report for IOCL, PX-PTA Panipat

Report Period Month of January to March, 2022

For NETEL (INDIA) LIMITED

ANIL SHELKE

GENERAL MANAGER - EMS



LEAK DETECTION AND REPAIR (LDAR) PROGRAM BENZENE QUARTERLY REPORT FROM JANUARY 2022 TO MARCH 2022 PLANTWISE SUMMARY

Sr.No.	Name of the Unit	Date of Monitoring	Total No of Points Monitored	Page No.	No. of Points Where leaks found beyond standard limits	Total Leak (kg/day)
1	PX-1	25/03/2022	198	7 to 11	0	0.104
2	PX-2	25/03/2022	80	11 to 13	0	0.053
3	PTA	26/03/2022	64	13 to 15	0	0.047
Ţ	otal in Kg/day		342		0	0.204
Tot	al in MT/Annum					0.074

Verified by

Surekha Jamdar Technical Manager

Checked by

Shraddha Kere Quality Manager

Report for the month of January 2022 to March 2022